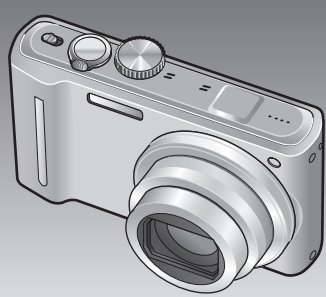
Panasonic

Operating Instructions for advanced features

Digital Camera

Model No. **DMC-TZ10/DMC-ZS7**
DMC-TZ8/DMC-ZS5

LUMIX



Before use, please read these instructions completely.

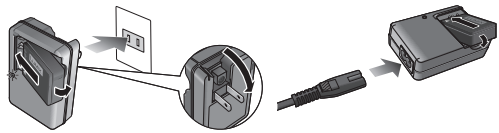
SDXC™

VQT2R48

Quick start guide

The battery is not charged when the camera is shipped. Charge the battery and set the Clock before use.
When you do not use the card (optional), you can record or play back pictures on the built-in memory (→16).

1 **Charge the battery**



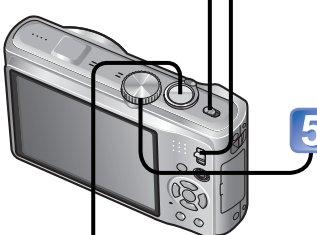
2 **Insert the battery and the card**



3 **Turn on the power**

4 **Set REC/PLAY switch to** 📷





5 **Set the mode dial to** iA



6 **Press the shutter button and take pictures**



Press halfway (press lightly to focus)

Press fully (press the button all the way to record)

■ To play back the pictures



1. Set REC/PLAY switch to ▶.
2. Select the picture you want to view.



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Before use

Read first

■ **Do a test shot first!**

Check first to see if you can take pictures and record sounds (motion pictures/still pictures with audio) successfully.

■ **We will not compensate for failed/ lost recording or for direct/indirect damage.**

Panasonic will not provide compensation even if damage is caused by faults with camera or card.

■ **Carefully observe copyright laws.**

- Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

■ **Certain pictures cannot be played back.**

- Pictures edited on a computer
- Pictures taken or edited on a different camera
 (Pictures taken or edited on this camera may also not be able to be played back on other cameras)

■ **Software on the CD-ROM supplied**

The following actions are prohibited:

- Making duplicates (copying) for sale or rent
- Copying onto networks

LCD monitor characteristics

Extremely high precision technology is employed to produce the LCD monitor screen. However there may be some dark or bright spots (red, blue or green) on the screen. This is not a malfunction.
The LCD monitor screen has more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit. The spots will not be recorded on pictures on the built-in memory or a card.

Unit temperature

The surface of the camera (especially the grip area, etc.), the battery and memory card may become warm during use.
This does not cause a problem with the performance or quality of the camera.



This manual provides operating instructions for the DMC-TZ10/DMC-ZS7/DMC-TZ8/DMC-ZS5. The appearance, specifications, and screen display vary depending on the model that is used. The descriptions in this manual are primarily based on the DMC-TZ10/DMC-ZS7.
Details about functions specific to each model are indicated by symbols added to headings or at the end of descriptions, etc.

(Example)
Functions available in the DMC-TZ10/DMC-ZS7 only: TZ10 ZS7
Functions available in the DMC-TZ8/DMC-ZS5 only: TZ8 ZS5

To prevent damage, malfunctions, and faults

■ Avoid shocks, vibration, and pressure.

- Avoid exposing the camera to strong vibration or shock; e.g. dropping or hitting the camera, or sitting down with the camera in your pocket. (Attach hand strap to avoid dropping camera. Hanging any items other than the supplied hand strap from the camera can apply pressure against it.)
- Do not press the lens or the LCD monitor.

■ Do not get the camera wet or insert foreign objects.
This camera is not waterproof.

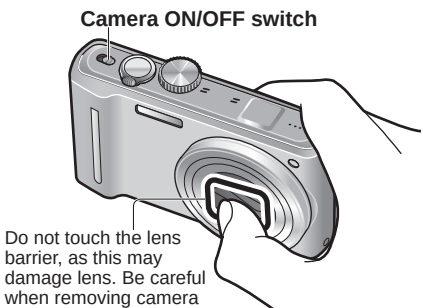
- Do not expose the camera to water, rain, or seawater.
 (If camera gets wet, wipe with a soft, dry cloth. Wring cloth thoroughly first if wet with seawater, etc.)
- Avoid exposing lens and socket to dust or sand, and do not allow liquids to leak into gaps around buttons.

■ Avoid condensation caused by sudden changes in temperature and humidity.

- When moving between places of different temperature or humidity, place camera into a plastic bag and allow to adjust to conditions before use.
- If the lens clouds up, turn off the camera and leave for about two hours to allow camera to adjust to conditions.
- If the LCD monitor clouds up, wipe with a soft, dry cloth.

■ Lens

- If lens is dirty:
 Images may appear slightly white if lens is dirty (fingerprints, etc.).
 Turn the power on, hold the extracted lens barrel with your fingers, and gently wipe the lens surface with a soft, dry cloth.
- Do not leave the lens exposed to direct sunlight.



■ When using a tripod or unipod

- Do not apply excessive force or tighten screws when they are crooked. (This may damage the camera, screw hole, or label.)
- Ensure that the tripod is stable. (Refer to the tripod instructions.)

■ When transporting

Turn off the camera.

Please also refer to ‘Usage cautions and notes’ (→163).

Before use (Continued)

About GPS TZ10 ZS7

■ About the camera's location name information

Before using the camera, read "User License Agreement for Location Name Data". (→165)

■ The GPS function can be used even when the camera's power is off.

When [GPS SETTING] is [ON], the GPS function works to check your current position periodically even if the camera's power is OFF.

- When turning off the camera's power in an airplane, hospital or other restricted area, set [GPS SETTING] to GPS or [OFF]. (→85)
- When [GPS SETTING] is [ON], power will drain from the battery even if the camera's power is OFF.

■ Recording location information

- Recording location names and landmarks (such as building names) are current as of February 2010. These will not be updated.
- Depending on the country or area, limited location name and landmark information may be available.

■ Positioning

Because the positions of the GPS satellites are constantly changing, depending on the recording location and conditions, it may not be possible to position such satellites accurately, or positioning discrepancy may occur.

■ When using in another country

- GPS may not work in China or in the border regions of countries neighboring China. (Current as of February 2010)
- Some countries or regions may regulate the use of GPS or related technology. Because this camera has a GPS function, before taking it into another country, check with the embassy or your travel agency whether there are any restrictions on bringing cameras with a GPS function.

Standard Accessories

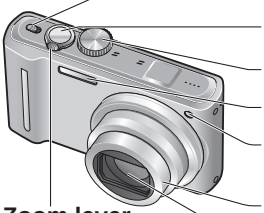
Check that all the accessories are included before using the camera.

- The accessories and their shape will differ depending on the country or area where the camera was purchased.
 For details on the accessories, refer to Basic Operating Instructions.
- Battery Pack is indicated as battery pack or battery in the text.
- Battery Charger is indicated as battery charger or charger in the text.
- 'PHOTOfunSTUDIO 5.1 HD Edition' is included with the DMC-TZ10/DMC-ZS7 model.
 'PHOTOfunSTUDIO 5.0' is included with the DMC-TZ8/DMC-ZS5 model.
 In this manual, 'PHOTOfunSTUDIO' refers to either version of the software.
- Please dispose of all packaging appropriately.

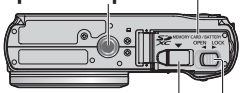
■ Optional accessories

- Cards are optional. You can record or play back pictures on the built-in memory when you are not using a card. (→16)
- Consult the dealer or your nearest servicentre if you lose the supplied accessories. (You can purchase the accessories separately.)

Names of parts

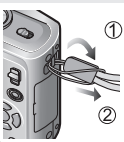


Camera ON/OFF switch (→17)
Shutter button (→34)
Mode dial (→31)
Flash (→47)
Self-timer indicator (→52)/ **AF Assist Lamp** (→106)
Lens barrel
Lens (→7)
Zoom lever (→39)



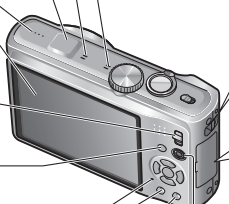
Card/Battery door (→14)
Tripod receptacle
DC coupler cover (→15)
Release lever (→14)

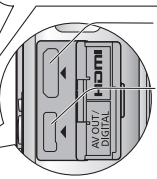
Hand strap eyelet



We recommend using the supplied hand strap to avoid dropping the camera.

Microphone (→72, 106)
GPS antenna (→84)
Speaker (→22, 115)
LCD monitor (→6, 23, 46, 152, 158)
REC/PLAY switch (→30)
[EXPOSURE] button (→56, 57, 58)
Status indicator (→84)
[DISPLAY] button (→46)
Q.MENU (Quick setting →112)/ **Delete button** (→45)





HDMI socket (→148, 149)
[AV OUT/ DIGITAL] socket (→141, 144, 147)

Motion picture button (→72)

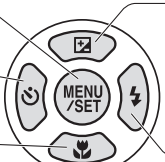
● The illustrations and screens in this manual may differ from the actual product.

Cursor button

[MENU/SET]
(menu display/set/finish) (→20)

Left cursor button (◄)
• Self-timer (→52)

Down cursor button (▼)
• Macro Mode (→49)
• AF Lock (AF Tracking) (→36, 99)

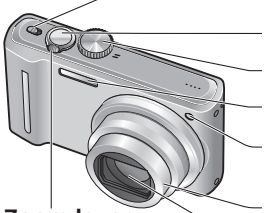


Up cursor button (▲)
• Exposure Compensation (→53)
• Auto Bracket (→54)
• Multi Aspect (→55)
• White Balance fine adjustment (→98)

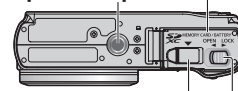
Right cursor button (►)
• Flash (→47)

● In this manual, the button that is used is shaded or indicated by ▲▼◄►.

Names of parts

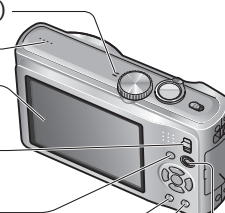


Camera ON/OFF switch (→19)
Shutter button (→34)
Mode dial (→33)
Flash (→47)
Self-timer indicator (→52)/ **AF Assist Lamp** (→106)
Lens barrel
Lens (→7)
Zoom lever (→39)

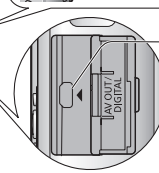


Card/Battery door (→14)
Tripod receptacle
DC coupler cover (→15)
Release lever (→14)

Microphone (→76, 106)
Speaker (→22, 115)
LCD monitor (→6, 23, 46, 152, 158)
REC/PLAY switch (→32)
[EXPOSURE] button (→56, 57, 58)
[DISPLAY] button (→46)
Q.MENU (Quick setting →112)/ **Delete button** (→45)

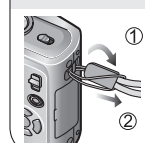


[E.ZOOM] button (→42)



[AV OUT/ DIGITAL] socket (→141, 144, 147)

Hand strap eyelet



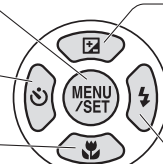
We recommend using the supplied hand strap to avoid dropping the camera.

Cursor button

[MENU/SET]
(menu display/set/finish) (→20)

Left cursor button (◄)
- Self-timer (→52)

Down cursor button (▼)
- Macro Mode (→49)
- AF Lock (AF Tracking) (→36, 99)



Up cursor button (▲)
- Exposure Compensation (→53)
- Auto Bracket (→54)
- Multi Aspect (→55)
- White Balance fine adjustment (→98)

Right cursor button (►)
- Flash (→47)

● In this manual, the button that is used is shaded or indicated by ▲▼◄►.

● The appearance, specifications, and screen display vary depending on the model that is used.

Charging battery

Always charge before first use! (not sold pre-charged)

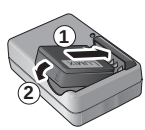
■About batteries that you can use with this unit

It has been found that counterfeit battery packs which look very similar to the genuine products are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we recommend that a genuine Panasonic battery pack is used.

- **Use the dedicated charger and battery.**
- **The camera has a function for distinguishing batteries which can be used safely. The dedicated battery supports this function. The only batteries suitable for use with this unit are genuine Panasonic products and batteries manufactured by other companies and certified by Panasonic. (Batteries which do not support this function cannot be used). Panasonic cannot in any way guarantee the quality, performance or safety of batteries which have been manufactured by other companies and are not genuine Panasonic products.**

1 Insert the battery terminals and attach the battery to the charger

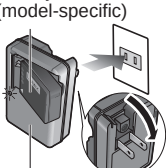
Ensure [LUMIX] faces outwards.



2 Connect the charger to the electrical outlet

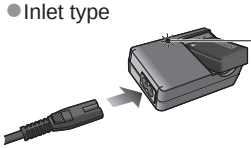
●Plug-in type

Battery (model-specific)

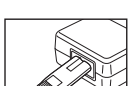


Charger (model-specific)

●Inlet type



- The AC cable does not fit entirely into the AC input terminal. A gap will remain.



3 Detach the battery after charging is completed

Charging light ([CHARGE])

On: Charging in progress (approx. 130 min. if fully depleted)

Off: Charging complete

If light is flashing:

- Charging may take longer than normal if battery temperature is too high or too low (charging may not be completed).
- Battery/charger connector is dirty. Clean with a dry cloth.

Charging battery (Continued)

Guidelines for number of recordable pictures and recording time

Figures may be reduced if flash, zoom, or [LCD MODE] are used frequently; or in colder climates.
The number of recordable pictures and the recording time will also be reduced if the GPS function is operating. TZ10 ZS7

■ Recording still pictures

Number of recordable pictures	Approx. 300 pictures TZ10 ZS7 Approx. 340 pictures TZ8 ZS5	By CIPA standard
Recording time	Approx. 150 min TZ10 ZS7 Approx. 170 min TZ8 ZS5	

● Recording conditions by CIPA standard

- CIPA is an abbreviation of [Camera & Imaging Products Association].
- [PROGRAM AE] Mode
- [GPS SETTING] is set to [OFF] TZ10 ZS7
- Temperature: 23 °C/Humidity: 50% when LCD monitor is on.*1
- Using a Panasonic SD Memory Card (32 MB).
- Using the supplied battery.
- Starting recording 30 seconds after the camera is turned on. (When the Optical Image Stabilizer function is set to [AUTO].)
- Recording once every 30 seconds with full flash every second recording.
- Rotating the zoom lever from Tele to Wide or vice versa in every recording.
- Turning the camera off every 10 recordings and leaving it until the temperature of the battery decreases.

*1 The number of recordable pictures decreases when [LCD MODE] is used.

Number reduced if intervals are longer – e.g. to approx. one quarter for 2-minute intervals under the above conditions.

■ Recording motion pictures TZ10 ZS7

	[AVCHD Lite(GPS REC)]/ [AVCHD Lite]	[MOTION JPEG]*2
Available continuous recording time	About 100 minutes	About 100 minutes
Actual available recording time *3	About 50 minutes	About 50 minutes

● Recording conditions

- Temperature 23°C, humidity 50%
- [PROGRAM AE] Mode
- [GPS SETTING] is set to [OFF]
- Picture quality settings: [AVCHD Lite] [SH]/[MOTION JPEG] [HD]

*2 A maximum of approx. 2 GB of continuous motion picture can be recorded in [MOTION JPEG] format. (Even if there is more than 2 GB of available space on the card, the available recording time will be calculated for a maximum of 2 GB.)

*3 The time you can actually record when repeatedly turning the power on and off, starting and stopping recording and using zoom.

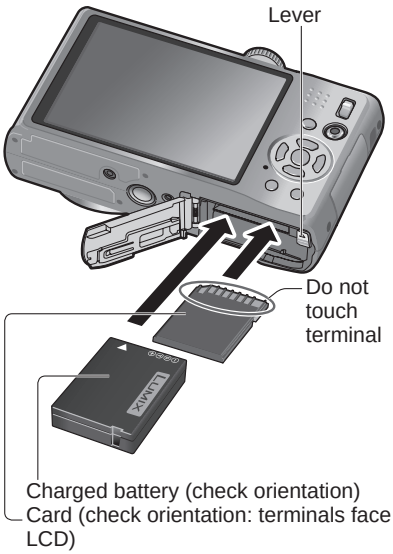
■ Viewing pictures

Playback time	About 300 minutes

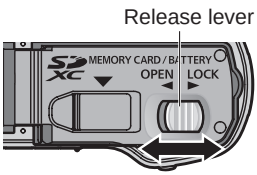
The number of recordable pictures or available recording time may vary slightly according to battery and usage conditions.

- The time required for charging varies depending on conditions of battery usage. Charging takes longer at high or low temperatures and when the battery has not been used in some time.
- Battery will be warm during charging and for some time thereafter.
- Battery will run out if not used for long periods of time, even after being charged.
- Charge the battery with the charger indoors (10 °C - 35 °C).
- Do not leave any metal items (such as clips) near the contact areas of the power plug. Otherwise, a fire and/or electric shocks may be caused by short-circuiting or the resulting heat generated.
- Frequently charging up battery is not recommended. (Frequently charging battery reduces maximum usage time and can cause battery to expand.)
- Do not disassemble or modify the charger.
- If available battery power is significantly reduced, battery is reaching end of lifespan. Please purchase a new battery.
- The battery charger is in the standby condition when the AC power is supplied. The primary circuit is always “live” as long as the battery charger is connected to an electrical outlet.
- When charging:
 - Remove any dirt on connectors of charger and battery with dry cloth.
 - Keep at least 1 m (3.28 feet) away from AM radio (may cause radio interference).
 - Noises may be emitted from inside of charger, but this is not a fault.
 - After charging, remove the charger from the wall socket, and then remove the battery from the charger (up to 0.1 W consumed if left in place).
- Do not use a damaged or dented battery (especially connectors), e.g. by dropping (can cause faults).

Inserting and removing the card (optional)/ the battery



1 Set the camera ON/OFF switch to OFF
Slide to the [OPEN] position and open the lid



2 **Completely insert battery and card**

- Battery: Push in until the lever is locked
- Memory card: Push in until it clicks

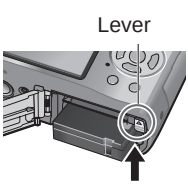
3 **Close lid**

Slide to the [LOCK] position.

■To remove

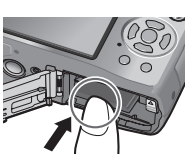
- **To remove battery:**

move lever in direction of arrow.

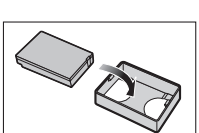


- **To remove card:**

press down in centre.

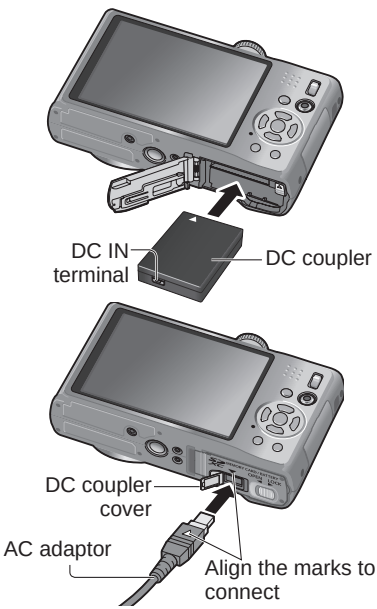


- Always use genuine Panasonic batteries.
- If you use other batteries, we cannot guarantee the quality of this product.
- **Remove battery from camera after use.**
 - Store the battery in battery carrying case (supplied).
- To remove the card or battery, turn the camera off and wait until the LUMIX indicator on the LCD monitor goes off. (Failure to wait may cause the camera to malfunction and may damage the card or recorded data.)
- Keep the Memory Card out of reach of children to prevent swallowing.



Using the DC coupler (optional) instead of battery

By using the AC adaptor (optional) and DC coupler (optional), you can record and play back without worrying about the remaining battery charge.
The optional DC coupler can only be used with the designated Panasonic AC adaptor.



1 Insert DC coupler instead of battery (previous page)

2 Open DC coupler cover

- If difficult to open, with the card/battery door open, press the coupler cover from the inside to open it.

3 Plug AC adaptor into power outlet

4 Connect AC adaptor to DC IN terminal of DC coupler

- Always use a genuine Panasonic AC adaptor (optional).
- Use the AC adaptor and DC coupler specifically for this camera. Using other adaptors or couplers could cause camera failure.
- It may not be possible to install camera on a tripod or unipod when the DC coupler is connected, depending on the type of tripod or unipod.
- The camera cannot be stood up when the AC adaptor is connected. If you are leaving the camera on a surface as you work, it is recommended to set it on a soft cloth.
- When the AC adaptor is connected, always remove the AC adaptor when opening the card/battery door.
- Remove the AC adaptor and DC coupler when not in use and close the coupler cover.
- Also read the AC adaptor and DC coupler operating instructions.

Inserting and removing the card (optional)/ the battery (Continued)

Picture save destination (cards and built-in memory)

Pictures will be saved to a card if one is inserted, or to the built-in memory IN if not.

■ **Built-in memory (approx. 15 MB TZ10 ZS7, approx. 40 MB TZ8 ZS5)**

- **Pictures may be copied between cards and the built-in memory (→137).**
- The access time for the built-in memory may be longer than the access time for a card.
- Clipboard pictures (→110) are saved to built-in memory.
- [QVGA] in [REC QUALITY] can only be available to record motion pictures in the built-in memory.

■ **Compatible memory cards (optional)**

The following SD standard-based cards (Panasonic brand recommended)

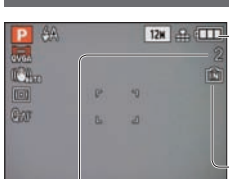
Type of Card	Capacity	Notes
SD memory cards	8 MB – 2 GB	• Can be used with devices compatible with the respective formats. • Before using SDXC memory cards, check your computer and other devices support this type of card. http://panasonic.net/avc/sdcard/information/SDXC.html • Cards in capacities not listed at left are not supported.
SDHC memory cards	4 GB - 32 GB	
SDXC memory cards	48 GB - 64 GB	

- Please reformat the card with this camera if it has already been formatted with a computer or another device. (→28)
- If the write-protect switch is set to 'LOCK', the card cannot be used to record or delete pictures, and it cannot be formatted.
- It is recommended that you copy important pictures to your computer (as electromagnetic waves, static electricity, or faults may cause data to be damaged).
- Latest information: http://panasonic.jp/support/global/cs/dsc/ (This Site is English only.)



Switch (LOCK)

Remaining battery and memory capacity



Remaining battery (only when using battery)


(flashes red)

If the battery mark flashes red, recharge or replace battery. (→11)

Displayed when no card is inserted (pictures will be saved to built-in memory)

Pictures remaining (TZ10 ZS7 →174, TZ8 ZS5 →176)

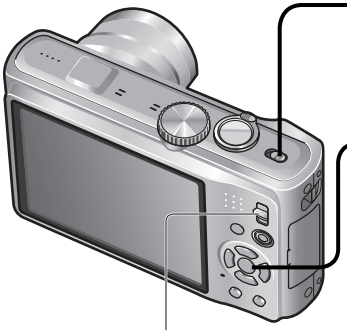
When in operation

(Card) or IN (Built-in memory) are illuminated red.
While the light remains lit, an operation is taking place, such as picture writing, reading, deletion or formatting. While the light is lit, do not turn off the power or remove battery, card, AC adaptor (optional) or DC coupler (optional) (this can cause data loss or damage). Do not subject the camera to vibrations, impact, or static electricity. Should any of these cause camera operation to be terminated, attempt to perform the operation again.

Setting the Clock

(The Clock is not set when the camera is shipped.)

Set REC/PLAY switch to 📷 before turning on the power.



REC/PLAY switch

1 Turn on the power



The power is turned on.
If the language select screen is not displayed, proceed to step 4.

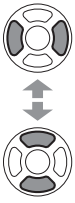
2 Press [MENU/SET] while the message is displayed

3 Press ▲▼ to select the language, and press [MENU/SET]

- The [PLEASE SET THE CLOCK] message appears. (This message does not appear in Playback Mode.)

4 Press [MENU/SET]

5 Press ◄► to select the items (year, month, day, hour, minute, display order or time display format), and press ▲▼ to set



Select the setting item

Change the values and settings

Select either [24HRS] or [AM/PM] for the time display format.



Select the display order for the day, month, and year ([M/D/Y], [D/M/Y], or [Y/M/D]).

- To cancel → Press 🗑.
- When set to [AM/PM], 0:00 midnight is AM 12:00, and 0:00 noon is PM 12:00.

6 Press [MENU/SET]

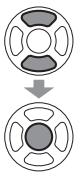
7 Press [MENU/SET]

- To return to the previous screen, press 🗑.

(Continued on the next page)

Setting the Clock (Continued)

8 If automatically correcting time of day, select [YES]

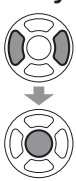




- To manually set date and time →select [NO].
- To return to the previous screen, press 🗑.

9 When [PLEASE SET THE HOME AREA] is displayed, press [MENU/SET]

10 Set your home area



City or area name

Current time



Difference from GMT (Greenwich Mean Time)

The current time and home area are set.
- [GPS SETTING] turns [ON]. (→85)

■About automatic time correction

(→89)

To change time setting

When resetting date and time, select [CLOCK SET] from the [SETUP] menu.
- Clock settings will be saved for approx. 3 months even after battery is removed, provided a fully-charged battery was installed in the camera for 24 hours beforehand.
- Using the GPS function, you can make settings to automatically correct the current time. (→89)

1 Select [CLOCK SET] from the [REC] menu or [SETUP] menu (→22)

2 Set the date and time (Perform steps 5 and 6 on the previous page.)

3 Press [MENU/SET]

■To set local time at travel destination

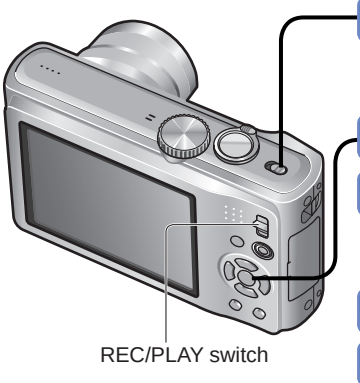
[WORLD TIME] (→93)

- Failure to set the date and time will cause the date/time to be improperly printed when printing pictures at a digital photo centre or when using [TEXT STAMP].
- Year can be set between 2000 and 2099.
- After the time has been set, the date can be printed correctly even if the date is not displayed on the camera screen.

Setting the Clock

(The Clock is not set when the camera is shipped.)

Set REC/PLAY switch to 📷 before turning on the power.



1 Turn on the power



The power is turned on.
If the language select screen is not displayed, proceed to step 4.

2 Press [MENU/SET] while the message is displayed

3 Press ▲▼ to select the language, and press [MENU/SET]

- The [PLEASE SET THE CLOCK] message appears. (This message does not appear in Playback Mode.)

4 Press [MENU/SET]

5 Press ◄► to select the items (year, month, day, hour, minute, display order or time display format), and press ▲▼ to set



Select the setting item

Change the values and settings

Select either [24HRS] or [AM/PM] for the time display format.



Select the display order for the day, month, and year ([M/D/Y], [D/M/Y], or [Y/M/D]).

- To cancel → Press 🗑.
- When set to [AM/PM], 0:00 midnight is AM 12:00, and 0:00 noon is PM 12:00.

6 Press [MENU/SET]

7 Confirm the setting and press [MENU/SET]



- To return to the previous screen, press 🗑.

Turn on the power again and check the time display. (Time and date can be displayed by pressing [DISPLAY] several times.)

To change time setting

Select [CLOCK SET] from the [SETUP] menu (→22), perform 5 and 6.

- Clock settings will be saved for approx. 3 months even after battery is removed, provided a fully-charged battery was installed in the camera for 24 hours beforehand.

■To set local time at travel destination

[WORLD TIME] (→93)

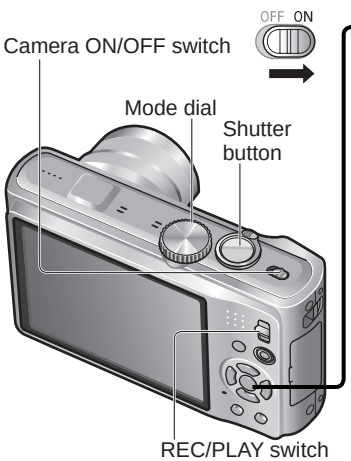
- Failure to set the date and time will cause the date/time to be improperly printed when printing pictures at a digital photo centre or when using [TEXT STAMP].
- Year can be set between 2000 and 2099.
- After the time has been set, the date can be printed correctly even if the date is not displayed on the camera screen.

For the operating procedures for the DMC-TZ10/DMC-ZS7 (→17)

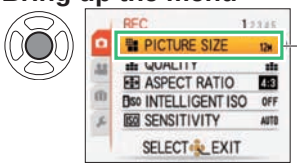
Setting the menu

Refer to the following procedures to operate menus such as the [SETUP] menu, [REC] menu, [TRAVEL MODE] menu and [PLAYBACK] menu.

(Example) While in [PROGRAM AE] Mode (→37), change [LCD MODE] on the [SETUP] menu. (REC/PLAY switch: set to 📷; mode dial: set to P)



1 Bring up the menu

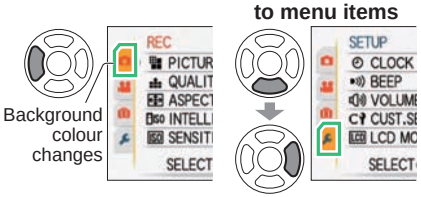


Each item's background colour changes when it is selected

2 Select the [SETUP] menu

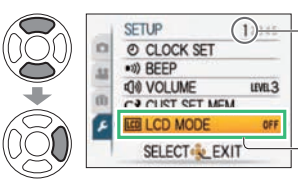
①Highlight

②Select and return to menu items



Background colour changes

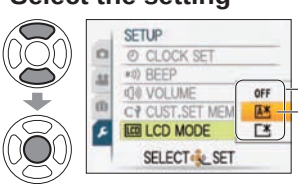
3 Select the item



Page (Zoom lever can be used to switch to next screen.)

Item

4 Select the setting



Settings

Selected setting

5 Close the menu



- When the REC/PLAY switch is set to 📷, menu can be closed with a half-press of the shutter button.

■To restore default settings

[RESET] (→26)

Settings display may vary according to items.
Menu items displayed vary according to mode dial setting.

Menu type

[REC] menu (REC/PLAY switch:)
[MOTION PICTURE] menu (REC/PLAY switch:) TZ10 ZS7

Changing picture preferences (→95 - 109)
- Displays settings such as White Balance, Sensitivity, Aspect Ratio, and Picture Size.

[TRAVEL MODE] menu (REC/PLAY switch:)

Categorize your travel pictures (→90 - 94)
- You can set the GPS settings TZ10 ZS7, Travel Date settings and more.

[SETUP] menu (REC/PLAY switch:)

Making the camera more convenient to use (→22 - 29)
- Displays settings for ease of use such as adjusting the Clock and changing the Beep sounds.

[PLAYBACK MODE] menu (REC/PLAY switch:)

Viewing recorded pictures (→118 - 125)
- Choose a playback type to see Slide Shows or just your favourite pictures.
- When [FAVORITE] (→133) is not set, [FAVORITE PLAY] is not displayed.

[PLAYBACK] menu (REC/PLAY switch:)

Using your pictures (→126 - 137)
- Displays settings for using the pictures you have taken, including protecting, cropping, and handy settings for printing your pictures (DPOF).

Using the [SETUP] menu

For details about the setting procedure in the [SETUP] menu (→20)
Make general camera settings such as adjusting the Clock, extending the battery life, and changing the Beep sounds.
[CLOCK SET], [ECONOMY] and [AUTO REVIEW] are important for Clock setting and battery life. Please check these before use.

Item	Settings, notes
[CLOCK SET] Set the date and time. (→17, 19)	Set time, date, and display format.
[BEEP] Change or mute the beep/shutter sounds.	**[BEEP LEVEL]** / / : Mute/Low/High
	[BEEP TONE] / / : Change beep tone.
	[SHUTTER VOL.] / / : Mute/Low/High
	[SHUTTER TONE] / / : Change shutter tone.
[VOLUME] Adjust volume of sound from speakers (7 levels).	**0 • • [LEVEL3] • • [LEVEL6]** • Cannot be used to adjust TV speaker volume when connected to TV. (We recommend setting camera volume to 0)
[CUST.SET MEM.] Register settings on current camera. (→59)	**[C1] / [C2] / [C3]**

For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
[LCD MODE] Make LCD monitor easier to see.	**[OFF]:** Normal (cancel setting) **[AUTO POWER LCD]:** The brightness is adjusted automatically depending on how bright it is around the camera. **[POWER LCD]:** Makes screen brighter than normal (for outdoor use). • [AUTO POWER LCD] does not work in the following cases: During playback, during menu display, when connected to computer/printer. • [POWER LCD] returns to ordinary brightness if there is no operation for 30 seconds when recording. (Press any button to make brighter again). • Because the picture shown on the LCD monitor screen emphasizes brightness, some subjects may look different than their actual appearance, but this will not affect the recorded picture. • Block out sunlight (with hand, etc.) if reflection makes screen difficult to see. • Setting [LCD MODE] will reduce the number of pictures that can be recorded and recording time. • When [LCD POWER SAVE] is set, the brightness of the LCD monitor follows the setting in [LCD MODE], but the picture quality of the LCD monitor stays at a low level.
[DISPLAY SIZE] Change the display size of the menu.	**[STANDARD]/[LARGE]**
[GUIDE LINE] Select recording information display and types of guidelines. (→46)	**[REC. INFO.]** **[OFF]/[ON]** (Display recording information with guide lines.)
	[PATTERN] / : Change the patterns of guide lines.
[HISTOGRAM] Check subject brightness on graph. (→46)	**[OFF]/[ON]**

Using the [SETUP] menu (Continued)

For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
[REC AREA] TZ10 ZS7 Enables verification of the recordable area for a motion picture before recording.	**[OFF]/[ON]** • Recordable area displayed for motion pictures should be interpreted as a Guideline. • When using Extra Optical Zoom, the recordable area may not always be displayed for certain zoom ratios. • This setting cannot be used with Intelligent Auto Mode. This section is not recorded. 
ECO **[ECONOMY]** Turn off the power or make the LCD monitor go dark while not using the camera to minimize battery consumption.	**[SLEEP MODE]** **[OFF]/[2 MIN.]/[5 MIN.]/[10 MIN.]:** Automatically shut off power while not in use. • To restore → Press the shutter button halfway, or turn on the power again. • Cannot be used in the following cases: When using AC adaptor (optional) and DC coupler (optional), when connected to computer/printer, during motion picture recording/playback, during Slide Shows, during automatic demo playback • Settings fixed to [5 MIN.] in [INTELLIGENT AUTO] Mode or [CLIPBOARD] Mode, or [10 MIN.] while Slide Show is paused.
	[LCD POWER SAVE] **[OFF]/[ON]:** The LCD monitor goes dark to minimize power consumption. • Reduces the picture quality of the LCD monitor display during recording to minimize battery consumption (except for the Digital Zoom area). Note, however, that there is no effect on the recorded picture. • When [LCD MODE] is set, the brightness of the LCD monitor follows the setting in [LCD MODE], but the picture quality of the LCD monitor stays at a low level.

[REC AREA] is not available in the DMC-TZ8/DMC-ZS5.

For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
[AUTO REVIEW] Automatically display still pictures immediately after taking them.	**[OFF]:** No auto review **[1 SEC.]/[2 SEC.]:** Automatically display for 1 or 2 seconds. **[HOLD]:** Auto review screen remains until a button (other than the [DISPLAY] button) is pressed • Fixed to [2 SEC.] in [INTELLIGENT AUTO] Mode. • In [SELF PORTRAIT], [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], and [PHOTO FRAME] Scene Modes, [AUTO BRACKET], [MULTI ASPECT], [BURST] Mode, or still pictures with audio, Auto Review performed regardless of setting. • Motion pictures cannot be automatically reviewed.
[ZOOM RESUME] Remember the zoom position when turning the power off.	**[OFF]/[ON]** • Cannot be set when using [SELF PORTRAIT] Scene Mode.
[NO.RESET] Reset picture file numbers.	**[YES]/[NO]** • The folder number is updated and the file number starts from 0001. • A folder number between 100 and 999 can be assigned. Numbers cannot be reset once folder number reaches 999. In this case, save all necessary pictures to your computer, and format the built-in memory/card (→28). • To reset folder number to 100: First, format the built-in memory or card, and reset the file numbers using [NO.RESET]. Then, select [YES] on the folder number reset screen. • File numbers and folder numbers. (→142)

Using the [SETUP] menu (Continued)

For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
[RESET] Reset to the default settings.	**[RESET REC. SETTINGS?]** **[YES]/[NO]**
	[RESET SETUP PARAMETERS?] **[YES]/[NO]**
	• Information registered in [FACE RECOG.] is reset if recording settings are reset. • Resetting the setup parameters will also reset the following. Age in years/months and names in [BABY] and [PET] Scene Modes, any settings in the [TRAVEL MODE] menu (including GPS function) TZ10 ZS7, [FAVORITE] in the [PLAYBACK] menu (set to [OFF]), [ROTATE DISP.] (set to [ON]) • Folder numbers and Clock settings will not be reset. • Camera movement may be audible as the lens function is reset. This is not a fault.
[USB MODE] Select communication method for when connecting camera to a computer or printer with USB connection cable.	**[SELECT ON CONNECTION]:** Select [PC] or [PictBridge (PTP)] each time you connect to a computer or PictBridge-compatible printer. **[PictBridge (PTP)]:** Select when connecting to a PictBridge-compatible printer. **[PC]:** Select when connecting to a computer.
[VIDEO OUT] Change the video output format when connected to a TV, etc. (Playback Mode only).	**[NTSC]/[PAL]** If the default setting is changed, AVCHD Lite motion pictures may not be played correctly. TZ10 ZS7 • Operates when AV cable is connected.
[TV ASPECT] Change the aspect ratio when connected to a TV, etc. (Playback Mode only).	16:9 / 4:3 • Operates when AV cable is connected.

For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
[HDMI MODE] TZ10 ZS7 Set the output resolution when connected to a high-definition TV with an HDMI mini cable (optional). (→148)	**[AUTO]:** The output resolution is automatically determined based on information from the connected TV. **[1080i]:** Outputs 1080 effective scanning lines in interlaced format. **[720p]:** Outputs 720 effective scanning lines in progressive format. **[576p]*1/[480p]*2:** Outputs 576 (or 480) effective scanning lines in progressive format.
	Interlaced and Progressive Formats In 'i' = interlaced format (interlaced scanning), half of the effective scanning lines are displayed alternately every 1/50*1 (1/60*2) second. In 'p' = progressive format (progressive scanning), high-density video signals are sent simultaneously for all effective scanning lines every 1/50*1 (1/60*2) second. The HDMI socket of this camera supports [1080i] high definition video output. To enjoy progressive video or high definition video, a TV compatible with these formats is required.
*1 When the video out is set to [PAL] *2 When the video out is set to [NTSC]	• Even if [1080i] is set, the motion picture is output at 720p during playback. • If no video appears on the TV even though [AUTO] is set, try switching to [1080i], [720p], or [576p]*1 ([480p]*2) to adjust to a video format that can be displayed on your TV. (See the manual for your TV.) • This is activated when an HDMI mini cable (optional) is connected. • For further details (→148)
[VIERA Link] TZ10 ZS7 Enable automatic linking with other VIERA Link-compatible devices, and operability with a VIERA remote control when connecting via an HDMI mini cable (optional) (→149).	**[OFF]:** Operations must be performed via the camera's own buttons. **[ON]:** Operations may be performed via the remote control of the VIERA Link-compatible device. (Not all operations will be available.) Operability of the camera's own buttons will be limited. • Works when connected via an HDMI mini cable (optional).

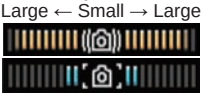
The [HDMI MODE], [VIERA Link] menu items are not available in the DMC-TZ8/DMC-ZS5.

Using the [SETUP] menu (Continued)

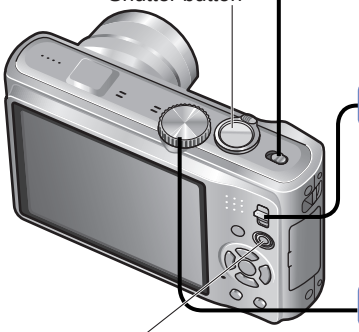
For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
[VERSION DISP.] Check the version of the camera firmware.	Current version is displayed.
[FORMAT] Use when [BUILT-IN MEMORY ERROR] or [MEMORY CARD ERROR] appears, or when formatting the built-in memory or card. **When a card/built-in memory is formatted, the data cannot be restored. Check the content of the card/ built-in memory carefully before formatting.**	**[YES]/[NO]** • This requires a sufficiently charged battery (→11), or an AC adaptor (optional) and DC coupler (optional). When formatting the built-in memory, remove the cards. (Only inserted card will be formatted if present; built-in memory will be formatted if no card is inserted.) • Always format cards with this camera. • **All picture data including protected pictures will be deleted. (→135)** • Do not turn off power or perform other operations during formatting. • Formatting the built-in memory may take several minutes. • Consult your nearest Service Centre if format cannot be successfully completed.
[LANGUAGE] Change display language.	Set the language displayed on the screen.

For details about the setting procedure in the [SETUP] menu (→20)

Item	Settings, notes
DEMO **[DEMO MODE]** View demonstration of functions.	**[STABILIZER DEMO.]:** (Only during recording) Extent of jitter is shown on graph (estimate) Large ← Small → Large  Extent of jitter Extent of jitter after correction • During demo screen display, the Optical Image Stabilizer switches ON and OFF every time [MENU/SET] is pressed. • Cannot display during Playback Mode. • To stop→ Press the [DISPLAY] button. • Recording and zoom cannot be performed during demo.
	[AUTO DEMO]: View introductory Slide Show **[OFF]/[ON]** • To close → Press [MENU/SET] • When a card is not inserted, Automatic Demo Mode will start if there is no operation for about two minutes with the power ON when connected to the AC adaptor (optional) and DC coupler (optional). • [AUTO DEMO] cannot be displayed on external devices such as TVs.

Basic shooting operation



• Motion pictures can be recorded immediately by pressing the motion picture button.

1 Turn on the power



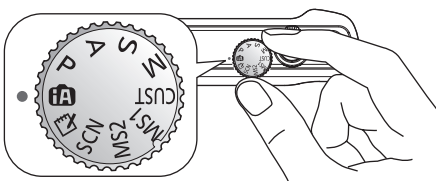
2 Set to



: Still pictures and motion pictures can be taken.

: The captured still pictures and motion pictures can be played back.

3 Set to the desired Recording Mode



Set to the mode you plan to use

4 Aim the camera and shoot

Taking still pictures

Press the shutter button

① **Gently press the shutter button**



Press halfway
(Adjust the focus)

② **Press and hold the shutter button to take the picture**



Press fully

Recording motion pictures

Press the motion picture button

① **Press the motion picture button to start recording**



② **Press the motion picture button again to finish recording**



• Motion pictures cannot be recorded in ([CLIPBOARD] Mode). (→110)

For the operating procedures for the DMC-TZ8/DMC-ZS5 (→32)

Please set the Clock before shooting (→17).

Holding the camera

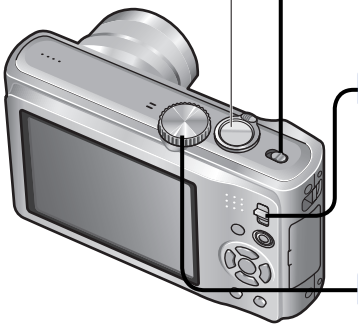


- Stand with your arms close to your body and with your legs apart.
- Do not touch the lens.
- Do not block the microphone when recording audio. (→9)
- Do not block the flash or the lamp. Do not look at it from close range.
- Make sure that the camera does not move at the moment the shutter button is pressed.

Mode dial

iA	**[INTELLIGENT AUTO] Mode**	Take pictures with automatic settings (→34).
P	**[PROGRAM AE] Mode**	Record pictures with your own settings. (→37)
A	**[APERTURE-PRIORITY] Mode**	Determine aperture, then record pictures. (→56)
S	**[SHUTTER-PRIORITY] Mode**	Determine shutter speed, then record pictures. (→57)
M	**[MANUAL EXPOSURE] Mode**	Determine aperture and shutter speed, then record pictures. (→58)
CUST	**[CUSTOM] Mode**	Record pictures using pre-registered settings. (→59)
MS1* MS2*	**[MY SCN MODE]** *Sometimes referred to as MS in this manual.	Take pictures in frequently-used Scene Modes (→71).
SCN	**[SCENE MODE]**	Take pictures according to scene (→61).
	[CLIPBOARD] Mode	Take pictures as memos (→110).

Basic shooting operation



1 Turn on the power



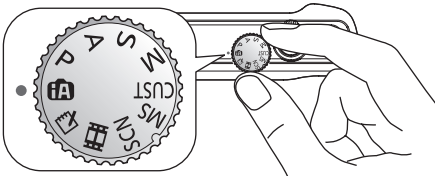
2 Set to



: Still pictures and motion pictures can be taken.

: The captured still pictures and motion pictures can be played back.

3 Set to the desired Recording Mode



Set to the mode you plan to use

4 Aim the camera and shoot

Taking still pictures

Press the shutter button

① **Gently press the shutter button**



Press halfway
(Adjust the focus)

② **Press and hold the shutter button to take the picture**



Press fully

Recording motion pictures
(🎞 only)

Press the shutter button

① **Gently press the shutter button**



Press halfway
(Adjust the focus)

② **Press and hold the shutter button to begin recording**



Press fully

③ **Press the shutter button again to finish recording**



Press fully

For the operating procedures for the DMC-TZ10/DMC-ZS7 (→30)

Please set the Clock before shooting (→19).

Holding the camera



- Stand with your arms close to your body and with your legs apart.
- Do not touch the lens.
- Do not block the microphone when recording audio. (→10)
- Do not block the flash or the lamp. Do not look at it from close range.
- Make sure that the camera does not move at the moment the shutter button is pressed.

Mode dial

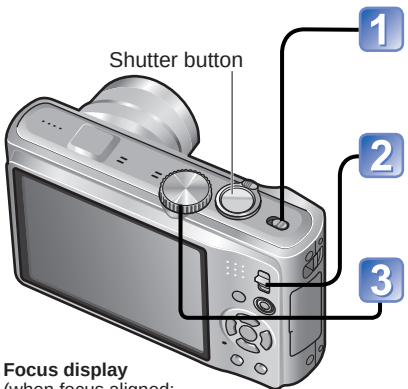
iA	**[INTELLIGENT AUTO] Mode**	Take pictures with automatic settings (→34).
P	**[PROGRAM AE] Mode**	Record pictures with your own settings. (→37)
A	**[APERTURE-PRIORITY] Mode**	Determine aperture, then record pictures. (→56)
S	**[SHUTTER-PRIORITY] Mode**	Determine shutter speed, then record pictures. (→57)
M	**[MANUAL EXPOSURE] Mode**	Determine aperture and shutter speed, then record pictures. (→58)
CUST	**[CUSTOM] Mode**	Record pictures using pre-registered settings. (→59)
MS	**[MY SCENE MODE]**	Take pictures in frequently-used Scene Modes (→71).
SCN	**[SCENE MODE]**	Take pictures according to scene (→61).
	[MOTION PICTURE] Mode	Take motion pictures (→76).
	[CLIPBOARD] Mode	Take pictures as memos (→110).

Taking pictures with automatic settings

[INTELLIGENT AUTO] Mode

Recording Mode: iA

Optimum settings are made automatically from information such as ‘face’, ‘movement’, ‘brightness’, and ‘distance’ just by pointing the camera at the subject, meaning that clear pictures can be taken without the need to make settings manually.



1 **Turn on the power**

OFF ON

2 **Set to** 📷

3 **Set to** iA ([INTELLIGENT AUTO] Mode)

4 **Take a picture**

Press halfway
(press lightly to focus)

Press fully
(press the button all the way to record)

Focus display
(when focus aligned:
flashing → illuminated)



Recognised scene icon displayed in blue for 2 sec.

■To take motion pictures TZ10 ZS7 (→72)

■Automatic Scene Detection

Camera reads scene when pointed at subject, and makes optimum settings automatically.

iP	Recognises people [i PORTRAIT]
iP	Recognises babies [i BABY] (When babies (under 3 years) that are registered with the Face Recognition function are recognised)
iL	Recognises landscapes [i SCENERY]
iP	Recognises night scenes and people in them [i NIGHT PORTRAIT] (Only when iA is selected)
iL	Recognises night scenes [i NIGHT SCENERY]
iM	Recognises close-ups [i MACRO]
iL	Recognises sunsets [i SUNSET]
iA	Reads subject movement to avoid blurring when scene does not correspond to any of the above.

■To use flash



Select either [ⱷA] (Auto) or [ⱷ] (Forced Flash Off).
- When [ⱷA] is used, [ⱷA], [ⱷA◎] (Auto/Red-Eye Reduction), [ⱷS◎] (Slow Sync./Red-Eye Reduction) and [ⱷS] (Slow Sync.) are selected automatically according to the subject type and brightness. For details (→47).
- [ⱷA◎] and [ⱷS◎] indicate that digital red-eye correction is activated.
- The shutter speed is slower in [ⱷS◎] and [ⱷS].

- Focus range (→51).
- The following menu items may be set in [INTELLIGENT AUTO] Mode:
 - ([REC] menu): [PICTURE SIZE]*1, [BURST], [COLOR EFFECT]*1, [FACE RECOG.]
 - ([MOTION PICTURE] menu) TZ10 ZS7: [REC MODE], [REC QUALITY]*1
 - ([TRAVEL MODE] menu): [GPS SETTING] TZ10 ZS7,[GPS AREA SELECT] TZ10 ZS7, [AREA INFO. SET] TZ10 ZS7, [TRAVEL DATE], [AUTO CLOCK SET] TZ10 ZS7, [WORLD TIME]
 - ([SETUP] menu*2): [CLOCK SET], [BEEP]*1, [LANGUAGE], [STABILIZER DEMO.]

 *1 Items that may be set differ from other Recording Modes.

 *2 Other items on the [SETUP] menu will reflect settings made in [PROGRAM AE] Mode, etc.
- According to the following conditions, different scene types may be determined for the same subject.
 Face contrast, conditions of subject (size, distance, colouring, contrast, movement), zoom ratio, sunset, sunrise, low brightness, jitter
- If desired scene type is not selected, we recommend manually selecting the appropriate Recording Mode. (Scene Mode: →61)
- Backlight compensation:
 Backlight refers to the light that shines from behind the subject. When this occurs, the subject appears darker, and so backlighting is automatically corrected by increasing the brightness of the entire image.
- We recommend using a tripod and the self-timer with [i NIGHT SCENERY] and [i NIGHT PORTRAIT].
- When jitter is small (e.g. using tripod) with [i NIGHT SCENERY], shutter speed can reach a maximum of 8 seconds. Do not move the camera.
- The settings for the following functions are fixed:
 - [AUTO REVIEW]: [2 SEC.] • [SLEEP MODE]: [5 MIN.] • [GUIDE LINE]:
 - [WHITE BALANCE]: [AWB] • [QUALITY]: (Fine) • [INTELLIGENT ISO]
 - [STABILIZER]: [AUTO] • [AF MODE]: (Face Detection)*3
 - [AF ASSIST LAMP]: [ON] • [PRE AF]: [Q-AF] • [METERING MODE]: (Multiple)
 - [I.EXPOSURE]: [STANDARD] • [I.RESOLUTION]: [i.ZOOM]
 - [RED-EYE REMOVAL]: [ON] • [CONTINUOUS AF]: [ON] • [WIND CUT]: [OFF]

 *3 (11-area-focusing) when face cannot be recognised
- The following functions cannot be used:
 [HISTOGRAM], [EXPOSURE], [AUTO BRACKET], [MULTI ASPECT], [WB ADJUST.], [DIGITAL ZOOM], [MIN. SHTR SPEED], [AUDIO REC.]

Taking pictures with automatic settings
[INTELLIGENT AUTO] Mode (Continued)
Recording Mode: iA

About Happy colours

If [COLOR EFFECT] is set to[Happy], both still and motion pictures are clearer, with more vivid colouring.



When setting [Happy]

- [Happy] can only be set in iA [INTELLIGENT AUTO] Mode.

Face Detection and Face Recognition

If the camera automatically identifies the scene and determines that people appear as subjects in the picture (or), Face Detection is activated, and the focus and exposure are adjusted for the recognised faces. (→99)

■ Face Recognition

The faces of people who are taken frequently can be registered together with their names, ages, and other information.
If pictures are taken with [FACE RECOG.] (→78) set to [ON], priority is given to the focus and exposure adjustments of the faces close to those that have been registered. Also, the camera memorises detected faces during Face Detection, automatically recognises faces which are taken frequently, and displays them on the face registration screen.

AF Tracking

Even if a subject, where the focus was locked (AF Lock) moves, the camera can continue to keep it in focus.

1 Set [AF MODE] to AF Tracking





AF Tracking frame

- To cancel AF Tracking → Press ▲ again.

2 Align the AF Tracking frame with the subject, and then lock.





AF Lock successful: Yellow
AF Lock failed: Red (flash)

- To cancel AF Lock → Press ▲.
- The optimum scene is detected for the subject where the focus was locked (AF Lock).

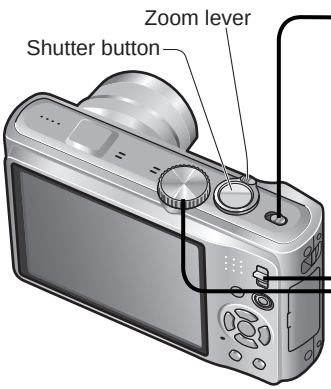
- Face Recognition will be inactive while using AF Tracking.
- If AF Lock is not successful for certain objects (→100).

Taking pictures with your own settings

[PROGRAM AE] Mode

Recording Mode: P

Using the [REC] menu to change settings and set up your own recording environment.



1 Turn on the power



2 Set to 📷



3 Set to P ([PROGRAM AE] Mode)

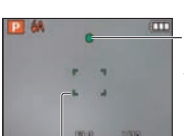


4 Take a picture



Press halfway
(press lightly to focus)

Press fully
(press the button all the way to record)



Focus display
(when focus is aligned:
flashing → illuminated)

AF area
(aligns focus with subject;
when complete: red → green)

■**To take motion pictures**
TZ10 ZS7
(→72)

■**To use zoom**
(→39)

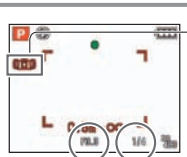
■**To use flash**
(→47)

■**To adjust picture brightness**
(→53)

■**To take close-up pictures**
(→49)

■**To adjust colouring**
(→98)

- If a warning is displayed about jitter, use [STABILIZER], a tripod, or [SELFTIMER].
- If aperture and shutter speed are shown in red, you do not have appropriate exposure. You should either use the flash, change [SENSITIVITY] settings or set [MIN. SHTR SPEED] to a slower speed.



Jitter alert display

Aperture value

Shutter speed

Taking pictures with your own settings

[PROGRAM AE] Mode (Continued)

Recording Mode: P

Align focus for desired composition

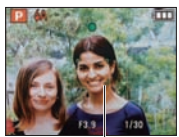
Useful when subject is not in centre of picture.

1 First adjust focus according to subject

Align the AF area with the subject



Hold down halfway

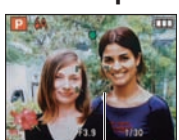


AF area

2 Return to desired composition



Press fully



AF area

- Subjects/environments which may make focusing difficult:
 - Fast-moving or extremely bright objects, or objects with no colour contrast.
 - Taking pictures through glass or near objects emitting light. In dark, or with significant jitter.
 - When too close to object or when taking pictures of both distant and close objects together in the same picture.
- **We recommend using the 'Face Detection' function when taking pictures of people (→99).**

Orientation detection function

Still pictures taken with the camera held vertically are automatically played back vertically. (Only when [ROTATE DISP.] is set to [ON])

- Still pictures taken with the lens surface facing directly up or down and still pictures taken on other cameras may not be rotated. Additionally, still pictures taken while holding the camera upside down are not rotated automatically.
- Motion pictures are not displayed vertically.

- The focus display flashes and beep sounds when focus is not aligned.
 Use the focus range displayed in red as a reference.
 Even if the focus display is lit, the camera may be unable to bring the subject into focus if it is out of range.
- AF area is displayed larger in dark conditions or when using Digital Zoom.
- Most displays are temporarily cleared from screen when the shutter button is pressed halfway.

Focus display



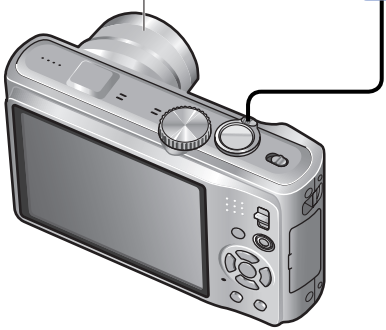
Focus range

Taking pictures with zoom

Recording Mode: iA P A S M MS SCN [TZ8] [ZS5]

You can zoom in up to 12 times with ‘Optical Zoom’, and up to 23.4 times with ‘Extra Optical Zoom’ (pictures only) with lower picture quality. To zoom further, you can use [i.ZOOM] or [DIGITAL ZOOM].

Do not block the lens barrel movement while zooming.



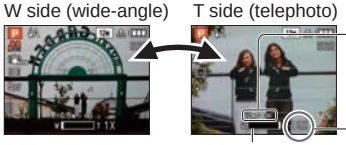
1 Zoom In/Out

Capture a wider area (wide-angle)



Enlarge the subject (telephoto)

W side (wide-angle) T side (telephoto)



- Zoom speed can be adjusted.
 Zoom slowly → turn slightly
 Zoom quickly → turn completely
- Adjust the focus after adjusting the zoom.

■Zoom types

Type	Optical Zoom	Extra Optical Zoom
Maximum ratio	12 ×	Up to 23.4 × (Depending on the picture size)
Picture quality deterioration	No	No (However, the picture size is reduced)
Operation conditions	None	Set [PICTURE SIZE] in the [REC] menu to a setting for which EZ is displayed (→95)
Screen display	W T	EZ W T EZ is displayed

Type	i.Zoom	Digital Zoom
Maximum ratio	Approx. 1.3 × the Optical Zoom or Extra Optical Zoom	Up to 4 × the original zoom ratio
Picture quality deterioration	Almost none	Yes
Conditions, etc.	i.Zoom functions in the following cases. • iA ([INTELLIGENT AUTO] Mode) • Scene Mode (except for [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE]) • [CLIPBOARD] Mode) • When [I.RESOLUTION] in the [REC] menu is set to [i.ZOOM] (→41)	When [DIGITAL ZOOM] in the [REC] menu is set to [ON] (→43)
Screen display	i.ZOOM W T i.ZOOM is displayed	W T Digital Zoom area is displayed

Taking pictures with zoom (Continued)

Recording Mode: iA P A S M MS SCN [CLIPBOARD] [TZ8] [ZS5]

- Maximum zoom ratios by picture size

		Optical Zoom	Extra Optical Zoom			
[PICTURE SIZE]	4:3	12 M	8 M EZ	5 M EZ	3 M EZ	0.3 M EZ
	3:2	11.5 M	7.5 M EZ	4.5 M EZ	2.5 M EZ	0.3 M EZ
	16:9	10.5 M	7 M EZ	4.5 M EZ	2 M EZ	0.2 M EZ
Max. enlargement		12 x	14.7 x*	18.8 x*	23.4 x	

*When the picture aspect ratio is 4:3

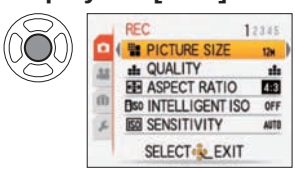
- What is Extra Optical Zoom (EZ)?
 If, for example, set to '3M EZ' (equivalent to 3 million pixels), a picture will only be taken of a 3M-sized central part of a 12 M (equivalent to 12.1 million pixels) area, meaning that the picture can be enlarged further.

- The enlargement ratio displayed in the bar on screen is an estimate.
- In certain Recording Modes, 'Tele macro' function (→49) is activated when maximum zoom ratio is reached.
- A greater degree of distortion may be generated by taking wider-angled pictures of close objects, while using more telescopic zoom may result in more colouring appearing around the outlines of objects.
- The camera may make a rattling noise and vibrate when the zoom lever is operated - this is not a fault.
- Extra Optical Zoom cannot be used in the following cases:
 [MACRO ZOOM], motion picture, [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], and [PHOTO FRAME] Scene Modes
- Digital Zoom cannot be used in the following modes:
 iA ([INTELLIGENT AUTO] Mode), [CLIPBOARD] ([CLIPBOARD] Mode), Scene Modes ([TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], [FILM GRAIN] and [PHOTO FRAME])
- [ZOOM RESUME] (→25) allows zoom ratio to be memorised even if power is turned off.

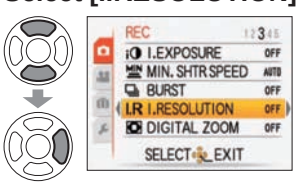
[i.ZOOM]

The camera uses super resolution technology to increase the zoom ratio. Using super resolution technology, the zoom ratio can be increased up to about 1.3 times higher than the original zoom ratio with almost no deterioration of picture quality.

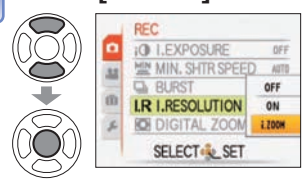
1 Display the [REC] menu



2 Select [I.RESOLUTION]



3 Select [i.ZOOM]



4 Close the menu



- When [I.RESOLUTION] is set to [i.ZOOM], super resolution technology is applied to the picture.
- The i.Zoom functions in the following cases.
 - iA ([INTELLIGENT AUTO] Mode)
 - Scene Mode (except for [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE])
 - ([CLIPBOARD] Mode)

Taking pictures with zoom (Continued)

Recording Mode: iA P A S M MS SCN TZ8 ZS5

Easy Zoom: For zooming rapidly to maximum ratio

Zoom to max. T in one touch.



1 Press to change zoom ratio

E.ZOOM

Each time you press, the ratio changes

■Change of zoom ratio

● When the Picture Size is 10.5 M or more

Current recording ratio (or 1 X)
↓
Optical Zoom Maximum ratio
↓
Extra Optical Zoom Maximum ratio*1
↓
Digital Zoom Maximum ratio*2
↑

● When the Picture Size is 8 M EZ or less

Current recording ratio (or 1 X)
↓
Extra Optical Zoom Maximum ratio
↓
Digital Zoom Maximum ratio*2
↑

*1 The Picture Size temporarily becomes [3M] (4:3), [2.5M] (3:2) or [2M] (16:9).
*2 When [DIGITAL ZOOM] in the [REC] menu is set to [ON].

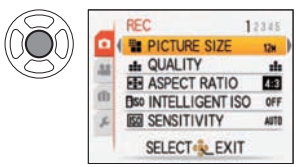
● Easy Zoom does not work while recording motion pictures.

Easy Zoom is not available in the DMC-TZ10/DMC-ZS7.

[DIGITAL ZOOM]

Zoom 4 times further than Optical/Extra Optical Zoom.
(Note that, with Digital Zoom, enlarging will decrease picture quality.)

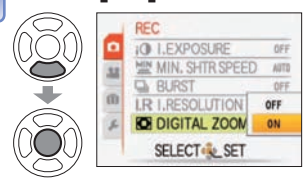
1 Display the [REC] menu



2 Select [DIGITAL ZOOM]



3 Select [ON]



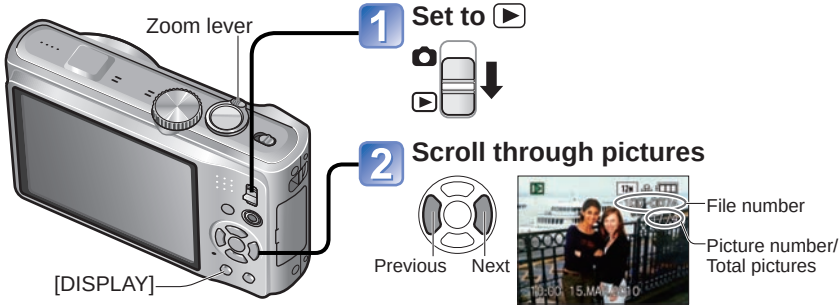
4 Close the menu



Viewing your pictures [NORMAL PLAY]

Playback Mode: ▶

When a card is in the camera, pictures are played back from the card, and without a card, pictures are played back from the built-in memory.
(Clipboard pictures can only be played back in [CLIPBOARD] Mode (→110).)



■To enlarge (Playback Zoom)



Turn to
T side



Current zoom position (displayed for 1 sec.)

- Each time you turn the zoom lever toward the T side, the magnification increases through four levels after 1x: 2x, 4x, 8x, and 16x. (The picture quality displayed becomes successively lower.)
- To reduce zoom→
 Turn lever towards W side
- Move zoom position→ ▲▼◄►

■To playback as list

(Multi Playback/Calendar Playback) (→114)

■To view with different Playback Modes

(Slide Show, Category Playback, etc.) (→118)

■To playback motion pictures

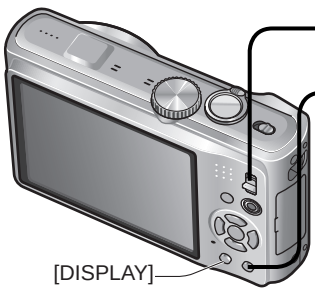
(→115)

- Hold down to quickly scroll forwards/backwards.
 (Only file numbers change while held down; picture is displayed when released)
 Scroll speed increases the longer you press.
 (Speed may vary according to playback conditions)
- If file number is not displayed, press the [DISPLAY] button.
- After the final picture, display returns to the first picture.
- Some pictures edited on a computer may not be able to be viewed on this camera.
- If the REC/PLAY switch is moved from 📷 to ▶ while the power is on, the lens barrel will be retracted after approx. 15 seconds.
- This camera is compliant with the unified DCF (Design rule for Camera File system) standard formulated by the Japan Electronics and Information Technology Industries Association (JEITA), and with Exif (Exchangeable image file format). Files that are not DCF-compliant cannot be played back.

Deleting pictures

Playback Mode:

Pictures deleted will be from the card if the card is inserted, or from the built-in memory if the card is not inserted. (Deleted pictures cannot be recovered.)



1 **Set to**

2 **Press to delete displayed picture**

Q.MENU

3 **Select [YES]**

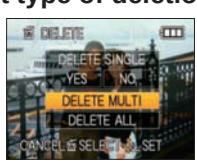


• Do not turn off the power during deletion.

To delete multiple (up to 50) or all pictures

(after step 2)

3 **Select type of deletion**

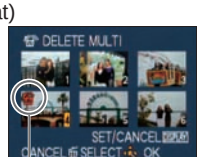


• To use [DELETE ALL] → go to step 6

4 **Select the pictures to delete**

(Repeat)

DISPLAY

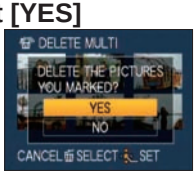


Picture selected

• To release → Press [DISPLAY] again

5 **Delete**

6 **Select [YES]**



- To cancel → press [MENU/SET].
- May take time depending on number of pictures deleted.
- [ALL DELETE EXCEPT ★] may be selected in [DELETE ALL] when [FAVORITE] is set to [ON] (→133) and pictures have been registered.

- Use a sufficiently charged battery or an AC adaptor (optional) and DC coupler (optional).
- Pictures cannot be deleted in the following cases:
 - Protected pictures
 - Card switch is in 'LOCK' position. • Pictures not of DCF standard (→44)
- Motion pictures can also be deleted.
- To delete clipboard pictures, set mode dial to .
- To delete all data including protected pictures, perform [FORMAT].

Changing recording information display

Change between different LCD monitor displays, such as Histograms.



1 Press to change display
DISPLAY

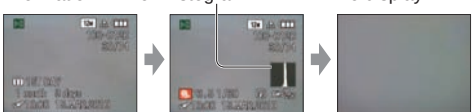
● **In Recording Mode**

Recording information*1 → Motion picture recording information*1,*2 → No display → Guide lines*1,*3



● **In Playback Mode**

Recording information → Recording information or Histogram*1 → No display



*1 Set [HISTOGRAM] to [ON] to display Histogram (→23).

*2 • Return to the 'Recording information' display by pressing the shutter button halfway. TZ10 ZS7
• Displayed when recording motion pictures instead of the left screen. TZ8 ZS5

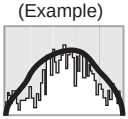
*3 Select Guide line pattern and recording information display on/off with [GUIDE LINE] setting (→23).

• When iA is in use, recording information and Guide lines cannot be displayed simultaneously.

■Histogram

Displays distribution of brightness in picture
– e.g. if the graph peaks at the right, this means there are several bright areas in the picture. (Guide) A peak in the centre represents correct brightness (correct exposure). This can be used as a reference for exposure correction (→53), etc.

(Example)



Dark← OK → Bright

- Histogram from time of recording is different to Histogram in playback and displayed in orange, when recording with flash or in dark locations. Also, Histogram may differ from Histograms made with image editing software.
- Not displayed during iA ([INTELLIGENT AUTO] Mode), ([CLIPBOARD] Mode), [MULTI ASPECT], [PHOTO FRAME] or Playback Zoom.

■Guide lines

- Reference for composition (e.g. balance) when recording.
- [INTELLIGENT AUTO] Mode and [CLIPBOARD] Mode display ⊞ only.
- This is not displayed in [MULTI ASPECT] Mode.

● Judge balance



● Judge centre of subject



● During Playback Zoom, Motion Picture Playback, Slide Show: Display on/off.
● During menu display, Multi Playback or Calendar Playback: Display cannot be changed.

Taking pictures with flash

Recording Mode: iA P A S M MS SCN



● Stand at least 1 m (3.28 feet) away when using flash to take pictures of infants.

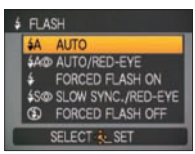
1 Display [FLASH]



2 Select the desired type



Can also be selected with ►.



(Example displayed about 5 seconds, [PROGRAM AE] Mode (📷))

Type, operations	Uses
[AUTO] • Automatically judges whether or not to flash	Normal use
[AUTO/RED-EYE]*1 • Automatically judges whether or not to flash (reduce red-eye)	Taking pictures of subjects in dark places
[FORCED FLASH ON] • Always flash	Taking pictures with backlight or under bright lighting (e.g. fluorescent)
[FORCED ON/RED-EYE]*1 • Always flash (reduce red-eye)	
[SLOW SYNC./RED-EYE]*1 • Automatically judges whether or not to flash (reduce red-eye; slow shutter speed to take brighter pictures)	Taking pictures of subjects against a nightscape (tripod recommended)
[FORCED FLASH OFF] • Never flash	Places where flash use is prohibited

*1 Two flashes will be emitted. Do not move until after the second flash. Interval between flashes varies according to brightness of subject.
If [RED-EYE REMOVAL] on the [REC] menu is [ON], the appears with the flash icon, red-eye is automatically detected and still picture data is corrected. (Only when [AF MODE] is (Face Detection))

● Shutter speeds are as follows:
- , , , : 1/30*2 - 1/2000th
- , : 1*2,*3 - 1/2000th

*2 Varies according to [MIN. SHTR SPEED] setting.
*3 When [MIN. SHTR SPEED] is set to [AUTO], it is maximum 1/4 second, and when [STABILIZER] is turned to [OFF] or there is little jitter, maximum 1 second. Also varies according to [INTELLIGENT AUTO] Mode, [SCENE MODE], zoom position.

● The effect of red-eye reduction varies depending on the subject and is affected by factors such as distance to the subject, whether the subject is looking at the camera during preliminary flash, and so on. In some cases, the effect of red-eye reduction may be negligible.

Taking pictures with flash (Continued)

Recording Mode: iA P A S M MS SCN

■Available types in each mode (○: Available, –: Not available, ▭: Default setting)

	iA	P A	S M											
⚡A	○*	○	○	○	○	○	–	○	–	–	–	–	–	○
⚡A👁	–	○	○	–	○	–	–	–	–	–	–	–	–	○
⚡	–	○	○	○	○	○	–	○	–	–	○	○	–	○
⚡👁	–	–	–	–	–	–	–	–	○	○	–	–	–	–
⚡S👁	–	○	–	–	–	–	○	–	○	○	–	–	○	–
🚫⚡	○	○	○	○	○	○	○	○	○	○	–	○	○	○

* Set to ⚡A (Auto), ⚡A👁 (Auto/Red-Eye Reduction), ⚡S👁 (Slow Sync./Red-Eye Reduction) or ⚡S (Slow Sync.) depending on the subject and brightness.

- The flash cannot be used when recording motion pictures, Scene Modes , , , , , , or .

■Focus range according to ISO Sensitivity and zoom

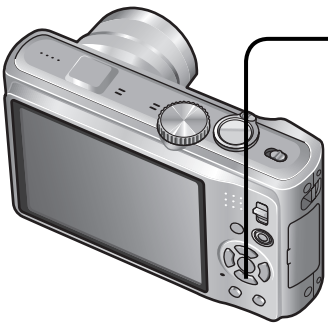
		Focus range	
		Max. W	Max. T
[SENSITIVITY] (→97)	AUTO	Approx. 0.6-5.3 m (1.97-17.4 feet)	Approx. 1.0-3.6 m (3.28-11.8 feet)
	ISO80	Approx. 0.6-1.5 m (1.97-4.92 feet)	Approx. 1.0m (3.28 feet)
	ISO100	Approx. 0.6-1.6 m (1.97-5.24 feet)	Approx. 1.0-1.1 m (3.28-3.61 feet)
	ISO200	Approx. 0.6-2.3 m (1.97-7.54 feet)	Approx. 1.0-1.6 m (3.28-5.25 feet)
	ISO400	Approx. 0.6-3.3 m (1.97-10.8 feet)	Approx. 1.0-2.2 m (3.28-7.22 feet)
	ISO800	Approx. 0.8-4.7 m (2.62-15.4 feet)	Approx. 1.0-3.2 m (3.28-10.5 feet)
	ISO1600	Approx. 1.15-6.7 m (3.77-22.0 feet)	Approx. 1.0-4.5 m (3.28-14.8 feet)
[INTELLIGENT ISO] (→96)	ISOMAX400	Approx. 0.6-3.3 m (1.97-10.8 feet)	Approx. 1.0-2.2 m (3.28-7.22 feet)
	ISOMAX800	Approx. 0.8-4.7 m (2.62-15.4 feet)	Approx. 1.0-3.2 m (3.28-10.5 feet)
	ISOMAX1600	Approx. 1.15-6.7 m (3.77-22.0 feet)	Approx. 1.0-4.5 m (3.28-14.8 feet)
[HIGH SENS.] (→66)	ISO1600-ISO6400	Approx. 1.15-13.5 m (3.77-44.3 feet)	Approx. 1.0-9.1 m (3.28-29.9 feet)
[FLASH BURST] (→67)	ISO100-ISO3200	Approx. 0.6-3.4 m (1.97-11.2 feet)	Approx. 1.0-2.3 m (3.28-7.54 feet)

- **Do not put your hands over the light-emitting area of the flash (→9, 10) or look at it from close range (a few centimeters away).**
 Do not use the flash at close distances to other subjects (heat/light may damage subject).
- Flash settings may be changed when changing Recording Mode.
- Scene Mode flash settings are restored to default when Scene Mode is changed.
- Edges of picture may become slightly dark if using flash at short distances without using zoom (close to max. W). This may be remedied by using a little zoom.
- If flash is to be emitted, flash type marks (e.g. ⚡A) will turn red when shutter button is pressed halfway.
- No pictures may be taken if these marks (e.g. ⚡A) are flashing (flash is charging).
- Insufficient flash reach may be due to inadequately set exposure or White Balance.
- Flash effect may not be fully achieved with high shutter speeds.
- Flash charging may take time if battery is low, or if using flash repeatedly.

Taking close-up pictures

Recording Mode: P A S M TZ8 ZS5

When you want to enlarge the subject, setting to [AF MACRO] (AF) enables you to take pictures at an even closer distance than the normal focus range (up to 3 cm (0.10 feet)) for max. W).



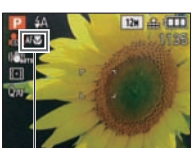
1 Display [MACRO MODE]

2 Select [AF MACRO]



Displayed for approx. 5 sec.

3 Take a picture



AF display

- It may take some time until distant subjects come into focus.
- When using iA ([INTELLIGENT AUTO] Mode), macro recording can be activated by just pointing the camera at the subject. (when iAF is displayed)
- [AF MACRO] automatically activates when [AF MODE] is set to (AF Tracking). (AF is not displayed.)

Taking close-up pictures without standing close to subject TELE ‘Tele macro’ function

Useful for taking close-up pictures of, for example, birds that may fly away if approached, or to blur background and emphasize subject.
‘Tele macro’ operates automatically when Optical or Extra Optical Zoom ratios are close to the maximum T setting (10x or above for Optical Zoom). The focus can be aligned for distances as close as 1 m (3.28 feet).



Turn to max. T



AF changes to TELE

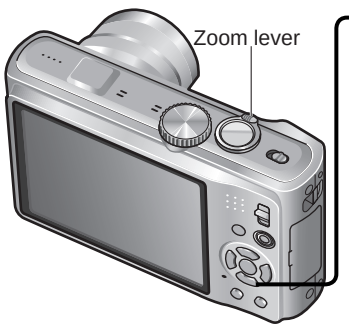
- Digital Zoom may also be used.
- This function also operates when taking pictures in the following Scene Modes. (TELE is not displayed) [FOOD], [CANDLE LIGHT], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], [FILM GRAIN] , [HIGH DYNAMIC], [UNDERWATER]

Taking close-up pictures (Continued)

Recording Mode: P A S M TZ8 ZS5

Taking pictures at even closer range [MACRO ZOOM]

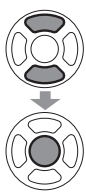
To take even larger images of the subject, setting to [MACRO ZOOM] enables the subject to appear even larger than when using [AF MACRO].



1 Display [MACRO MODE]



2 Select [MACRO ZOOM]

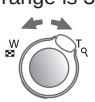


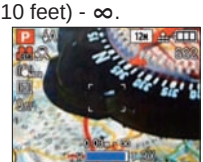


Displayed for approx. 5 sec.

3 Adjust the Digital Zoom magnification with the zoom lever

The zoom position is fixed at the Wide end.
Focus range is 3 cm (0.10 feet) - ∞.

Return  Enlarge



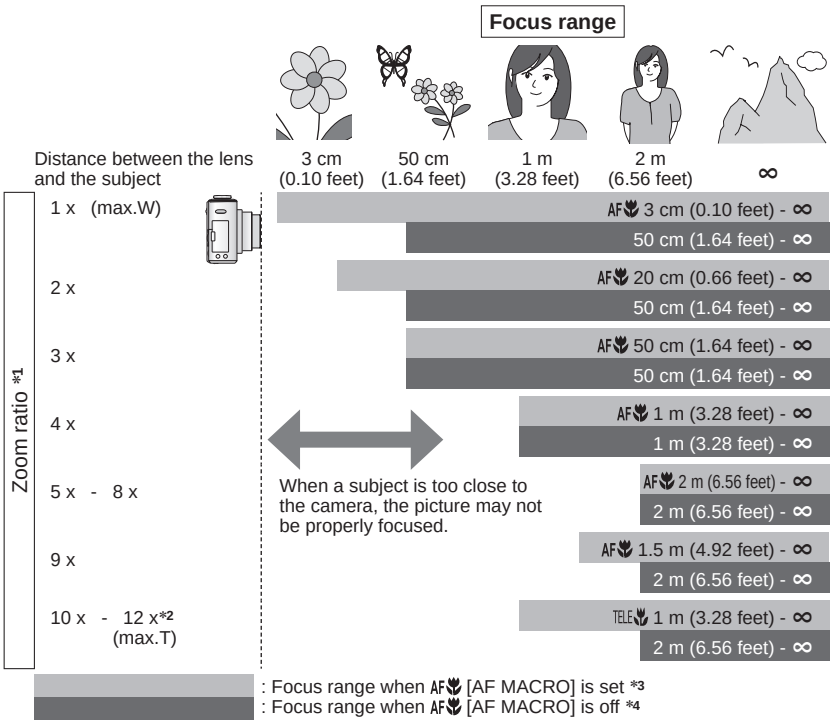
Digital Zoom magnification (1 x to 3 x)

4 Take a picture

- In [MACRO ZOOM], higher magnification results in lower picture quality.
- When [MACRO ZOOM] is set, Extra Optical Zoom or [i.ZOOM] does not work.
- [MACRO ZOOM] setting cannot be used while recording in [MULTI ASPECT] Mode.
- When [AF TRACKING] is set, zoom macro is cancelled.
- Using a tripod and [SELFTIMER] is recommended. Also, when recording a subject that is close to the camera, setting [FLASH] to [FORCED FLASH OFF] is recommended.
- Moving the camera after aligning the focus is likely to result in poorly focused pictures if subject is close to the camera, due to the margin for focus alignment being severely reduced.
- Resolution may be reduced around the edges of the picture.

Positioning camera and subject within accessible range for focus alignment

■Available recording range in P ([PROGRAM AE] Mode)



*1 Focus range varies depending on the zoom ratio.
*2 The maximum zoom ratio depends on the zoom type.
*3 The focus range is identical under the following settings:
- iA ([INTELLIGENT AUTO] Mode) • ([CLIPBOARD] Mode)
- [FOOD], [CANDLE LIGHT], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], [FILM GRAIN], [HIGH DYNAMIC], [UNDERWATER] in Scene Mode

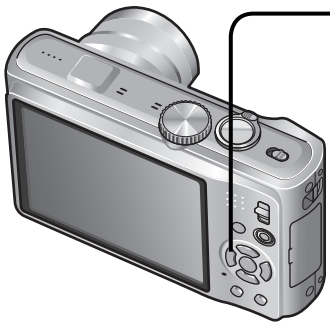
*4 The focus range is identical under the following settings:
- [PORTRAIT], [SOFT SKIN], [TRANSFORM], [PANORAMA ASSIST], [SPORTS], [PARTY], [SUNSET], [STARRY SKY], [BEACH], [SNOW], [PHOTO FRAME] in Scene Mode

- Zoom ratios are approximate.
- Ranges for focus alignment differ for Scene Modes.
- Max. W: Zoom lever turned as far as possible to W side (no zoom)
 Max. T: Zoom lever turned as far as possible to T side (maximum zoom ratio)

Taking pictures with self-timer

Recording Mode: iA P A S M MS SCN

We recommend using a tripod. This is also effective for correcting jitter when pressing the shutter button, by setting the self-timer to 2 seconds.



1 Display [SELFTIMER]

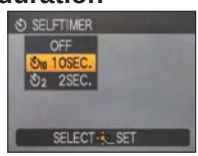


2 Select time duration

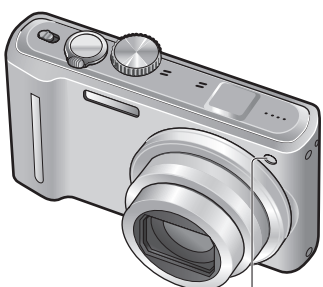


Can also be selected with ◄.





Displayed for approx. 5 sec.



Self-timer indicator
(Flashes for set duration)

3 Take a picture

Press the shutter button fully to start recording after the preset time.



• To cancel while in operation
→ Press [MENU/SET]

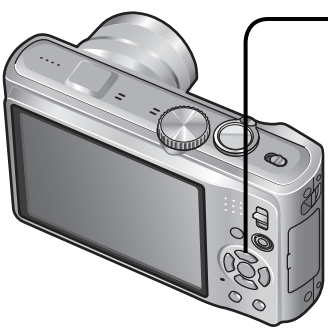
- When set to [BURST], 3 pictures are taken. When set to the [FLASH BURST] Scene Mode, 5 pictures are taken.
- Focus will be automatically adjusted immediately before recording if shutter button is pressed fully here.
- After self-timer lamp stops flashing, it may then be lit for AF Assist Lamp.
- This function cannot be used in the [UNDERWATER] and [HI-SPEED BURST] Scene Modes, or when recording motion pictures.
- [10SEC.] cannot be chosen in ([CLIPBOARD] Mode) or in Scene Mode [SELF PORTRAIT].

Taking pictures with Exposure Compensation

Recording Mode: P A S M MS SCN TZ8 ZS5

Corrects exposure when adequate exposure cannot be obtained (if difference between brightness of object and background, etc.). Depending on the brightness, this may not be possible in some cases.



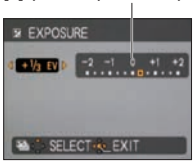


1 Display [EXPOSURE]

Press ▲

2 Select a value

[0] (no compensation)



- After exposure adjustment, the adjustment value (+1/3 for example) is displayed in the bottom-left corner of the screen.
- The Exposure Compensation value you set is retained even after the camera is turned off.
- Exposure Compensation cannot be used with the [STARRY SKY] Scene Mode.

Recording while exposure is changed automatically ([AUTO BRACKET])

Recording Mode: P A S M MS SCN

Records 3 pictures in continuous succession while exposure is changed automatically. After exposure adjustment, the adjustment value is set as the standard.

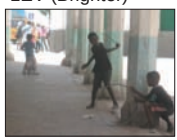
First picture
0EV (Standard)

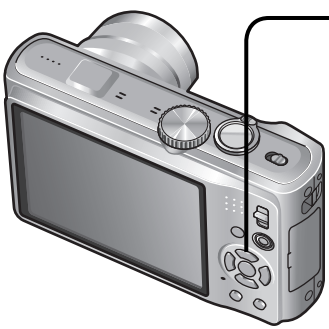


Second picture
-1EV (Darker)



Third picture
+1EV (Brighter)





1 Display [AUTO BRACKET]

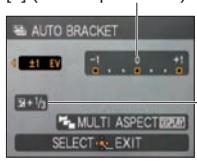


Press ▲ several times to switch [EXPOSURE] to [AUTO BRACKET]

2 Select a value



[0] (no compensation)



Value displayed after Exposure Compensation set

- Cancelled when the power is turned off.
- Cannot be used with flash or when there is remaining capacity for only 2 more pictures.
- When [AUTO BRACKET] is set, [MULTI ASPECT] and [BURST] are cancelled.
- Cannot be set in [TRANSFORM], [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [PIN HOLE], [FILM GRAIN], and [PHOTO FRAME] Scene Modes or when recording motion pictures.

Taking pictures by automatically changing the aspect ratio [MULTI ASPECT]

Recording Mode: P A S M MS SCN

In this mode, pressing the shutter button once automatically takes 3 still pictures in each of 3 Aspect Ratios: 4:3, 3:2, and 16:9. (The shutter sound is made only once.)

1 Display [AUTO BRACKET]



Press ▲ several times to switch [EXPOSURE] to [AUTO BRACKET]

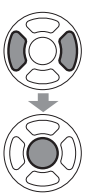
2 Display [MULTI ASPECT]

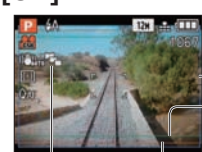
DISPLAY



Each time [DISPLAY] is pressed, the displayed indicator switches between [AUTO BRACKET] and [MULTI ASPECT].

3 Select [ON]





4:3 (blue)
16:9 (green)
3:2 (red)

display

■Picture Size combinations

4:3	3:2	16:9
12 M	11.5 M	10.5 M
8 M	7.5 M	7 M
5 M*	4.5 M*	4.5 M*

(Example)
When 3:2 is set to 7.5 M, the picture sizes and corresponding resolutions are 4:3 with 8 M, 3:2 with 7.5 M, and 16:9 with 7 M.

* If a smaller Picture Size is set, the resolution is temporarily set to this value.

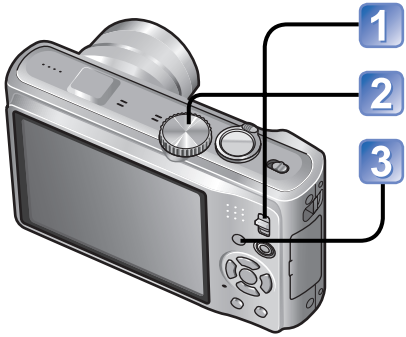
- After [MULTI ASPECT] is set, display is displayed on the left side of the screen.
- Shutter speed, aperture, focus, [EXPOSURE], [WHITE BALANCE], and [SENSITIVITY] settings will be constant for all three pictures.
- [MULTI ASPECT] is disabled when the number of recordable pictures is two or less. It is also cancelled when the power is turned off.
- When [MULTI ASPECT] is set, [AUTO BRACKET] and [BURST] are cancelled.
- Cannot be set in the [TRANSFORM], [PANORAMA ASSIST], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [PIN HOLE], [FILM GRAIN], and [PHOTO FRAME] Scene Modes.

Determine aperture and record

[APERTURE-PRIORITY] Mode

Recording Mode: A

When recording, you can control the range of focus (depth of field) to meet your recording purposes.
Shutter speed is automatically adjusted to be appropriate for the set aperture value.



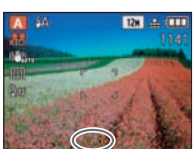
1 **Set to** (recording)

2 **Set to A** ([APERTURE-PRIORITY] Mode)

3 **Determine aperture value**



- When the aperture value is increased, the range of depth in focus expands, and the picture shows up clearly from the position of the camera to the background.
- When the aperture value is reduced, the range of depth in focus shrinks, and the background can get blurry.
- When the picture is too bright or too dark or there is incorrect exposure, the numbers for the aperture value and shutter speed are shown in red.



Aperture value

■Aperture values that can be set

Aperture value	Shutter speeds (seconds) set on this camera
F4.0 - F6.3	8 - 1/2000
F3.5	8 - 1/1600
F3.3	8 - 1/1300

- Aperture values that can be set vary depending on the zoom position. (The above table is at Max. W)

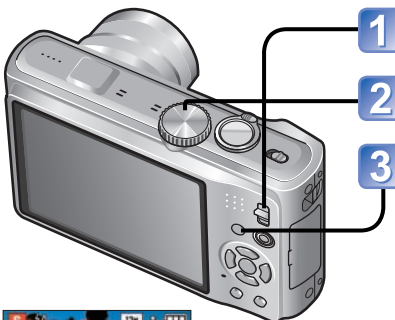
- LCD monitor brightness may vary from the actual still picture recorded.
- If too bright, increase the aperture, and if too dark, reduce the aperture.

Determine shutter speed and record

[SHUTTER-PRIORITY] Mode

Recording Mode: S

When recording, you can control the shutter speed to meet your recording purposes.
Aperture is automatically adjusted to be appropriate for the set shutter speed.



1 **Set to** (recording)

2 **Set to S** ([SHUTTER-PRIORITY] Mode)

3 **Determine shutter speed**



- At faster shutter speeds, movements by the subject show as if they are still.
- At slower shutter speeds, subjects that are moving show as jittery.
- When the picture is too bright or too dark or there is incorrect exposure, the numbers for the aperture value and shutter speed are shown in red.



Shutter speed

■Shutter speeds that can be set

Shutter speed (seconds)					Aperture values set on this camera
8	6	5	4	3.2	F3.3 - F6.3
2.5	2	1.6	1.3	1	
1/1.3	1/1.6	1/2	1/2.5	1/3.2	
1/4	1/5	1/6	1/8	1/10	
1/13	1/15	1/20	1/25	1/30	
1/40	1/50	1/60	1/80	1/100	
1/125	1/160	1/200	1/250	1/320	
1/400	1/500	1/640	1/800	1/1000	
1/1300					
1/1600					F3.5 - F6.3
1/2000					F4.0 - F6.3

- Aperture values that are set vary depending on the zoom position. (The above table is at max. W.)

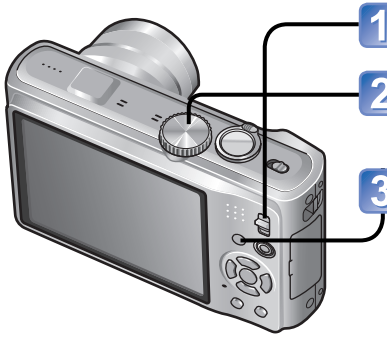
- LCD monitor brightness may vary from the actual still picture recorded.
- When using a slow shutter speed, it is recommended to use a tripod.
- In [SHUTTER-PRIORITY] Mode, cannot be set.

Determine aperture and shutter speed and record

[MANUAL EXPOSURE] Mode

Recording Mode: M

This mode of recording lets you set any aperture value and shutter speed when exposure adjustment prevents you from recording at the desired exposure (brightness/darkness). Also, long-exposure recording of up to 60 seconds is possible.



1 **Set to** (recording)

2 **Set to M** ([MANUAL EXPOSURE] Mode)

- Manual exposure assist is displayed. (About 10 seconds)

3 **Determine aperture and shutter speed**

EXPOSURE

◄►: Adjust aperture value
▲▼: Adjust shutter speed

- When the picture is too bright or too dark or there is incorrect exposure, the numbers for the aperture value and shutter speed are shown in red.
- If the shutter is pressed halfway, manual exposure assist is displayed. (About 10 seconds)

EXPOSURE



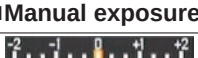
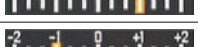
Aperture value/shutter speed

■Aperture values and shutter speeds that can be set

Aperture value	Shutter speed (seconds)
F4.0 - F6.3	60 - 1/2000
F3.5	60 - 1/1600
F3.3	60 - 1/1300

- Aperture values that can be set vary depending on the zoom position. (The above table is at Max. W.)

■Manual exposure assist (estimate)

	Shows pictures with standard brightness.
	Shows brighter pictures. For standard brightness, either use a faster shutter speed or increase aperture value.
	Shows darker pictures. For standard brightness, either use a slower shutter speed or reduce aperture value.

- LCD monitor brightness may vary from the actual still picture recorded.
- In Manual Exposure Mode, cannot be set.

Register your own settings and record

[CUSTOM] Mode

Recording Mode: CUST

Registering your preferred Recording Mode, [REC] menu settings, etc. to [CUST.SET MEM.] and setting the mode dial to CUST allows you to switch quickly to those settings.

C1 [CUST.SET MEM.] Registering your own settings

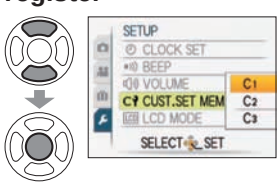
Up to 3 current camera settings can be registered.

■ **Recording Mode:** P A S M MS SCN

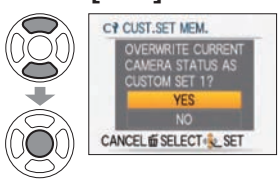
1 **Select the Recording Mode you wish to register and set the [REC] menu, [SETUP] menu, etc.**

2 **Select [CUST.SET MEM.] from the [SETUP] menu (→22)**

3 **Select the custom set to register**



4 **Select [YES]**



5 **Close the menu**



● The following menus and functions are saved in the custom set.

[REC] menu / Recording Functions		[SETUP] menu
[PICTURE SIZE]	[BURST]	[GUIDE LINE]
[QUALITY]	[I.RESOLUTION]	[HISTOGRAM]
[ASPECT RATIO]	[DIGITAL ZOOM]	[ZOOM RESUME]
[INTELLIGENT ISO]	[COLOR EFFECT]	
[SENSITIVITY]	[PICT.ADJ.]	
[WHITE BALANCE]	[STABILIZER]	
[FACE RECOG.] (ON/OFF only)	[AUDIO REC.]	
	[AF ASSIST LAMP]	
[AF MODE]	[RED-EYE REMOVAL]	
[PRE AF]	[REC MODE]	
[METERING MODE]	Exposure Compensation	
[I.EXPOSURE]	[AUTO BRACKET]	
[MIN. SHTR SPEED]	[MULTI ASPECT]	

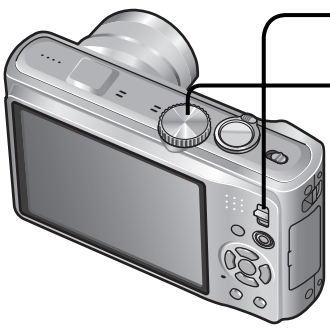
Register your own settings and record

[CUSTOM] Mode (continued)

Recording Mode: CUST

[CUSTOM] Switch to your own settings and record

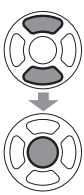
Settings registered in [CUST.SET MEM.] can be quickly called up by setting the mode dial to CUST.



1 **Set to** (recording)

2 **Set to** CUST (Custom Mode)

3 **Select custom set**



- Press [DISPLAY] to display the registered settings content.
 Use ◄► to switch between screens.
 Press [DISPLAY] again to return.

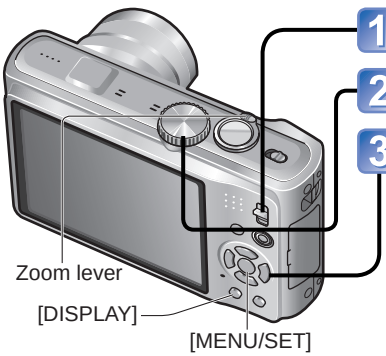
- Even if [REC] menu, etc. is changed in [CUSTOM], the content of the custom set does not change. When changing registration content, reset in [CUST.SET MEM.].
- At the time of purchase, [PROGRAM AE] Mode initial settings are registered in the custom set.

Taking pictures according to the scene

[SCENE MODE]

Recording Mode: MS SCN

Using [SCENE MODE] enables you to take pictures with optimum settings (exposure, colouring, etc.) for given scenes.



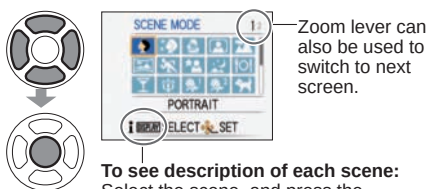
1 **Set to** 📷

2 **Set to** SCN

3 **Select and set the scene**

(Press [MENU/SET] and then press ►, if scene menu is not displayed)

● Scene menu



To see description of each scene:
Select the scene, and press the [DISPLAY] button.

■To take motion pictures

TZ10 ZS7

(→72)

■Registering commonly used scenes

[MY SCN MODE] TZ10 ZS7 (→71)

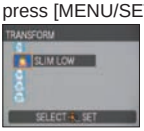
[MY SCENE MODE] TZ8 ZS5 (→71)

- Selecting a Scene Mode inappropriate for the actual scene may affect the colouring of your picture.
- Following [REC] menu settings will be automatically adjusted and cannot be selected manually (available settings vary according to scene setting).
 [INTELLIGENT ISO], [SENSITIVITY], [METERING MODE], [I.EXPOSURE], [MIN. SHTR SPEED], [I.RESOLUTION], [COLOR EFFECT], [PICT.ADJ.]
- White Balance can only be set in the next scene. (Setting is restored to [AWB] when scene is changed.)
 [PORTRAIT], [SOFT SKIN], [TRANSFORM], [SELF PORTRAIT], [PANORAMA ASSIST] (First picture only), [SPORTS], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [PIN HOLE], [HIGH DYNAMIC], [PHOTO FRAME], [UNDERWATER] (fine adjustment only)
- The types of flash available (→48) vary according to the scene. The Scene Mode flash setting is reset to the default setting when the Scene Mode is changed.
- Guidelines displayed in grey in [NIGHT PORTRAIT], [NIGHT SCENERY], [STARRY SKY], and [FIREWORKS] Scene Modes.

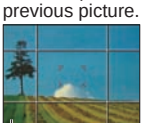
Taking pictures according to the scene

[SCENE MODE] (Continued)

Recording Mode: MS SCN

Scene	Uses, Tips	Notes
[PORTRAIT]	**Improves the skin tone of subjects for a healthier appearance in bright daylight conditions.** Tips • Stand as close as possible to subject. • Zoom: As telescopic as possible (T side)	• [AF MODE] default setting is (Face Detection).
[SOFT SKIN]	**Smoothes skin colours in bright, outdoor daylight conditions (portraits from chest upwards).** Tips • Stand as close as possible to subject. • Zoom: As telescopic as possible (T side)	• Clarity of effect may vary depending on brightness. • [AF MODE] default setting is (Face Detection). • If a part of the background etc. is a colour close to skin colour, this part is also smoothed.
[TRANSFORM]	**Changes the appearance of the subject by stretching the length or width.** ①Use ▲▼ to select the Transform level, and press [MENU/SET] to set.  • The settings can also be changed in the Quick menu. (→112) ②Take the picture. Notes • This function can be used for personal use only, and is not to be used for unauthorized commercial purposes or commercial gain, which would represent a copyright issue. • Do not use in ways that violate public order and decency or defame or slander others. • Do not use in ways that harm the subject.	• When taking a picture, a process is performed that improves the skin appearance. • The picture quality becomes slightly lower. • [PICTURE SIZE] will be fixed according to the [ASPECT RATIO] setting, as detailed below. 4:3 : 3 M 3:2 : 2.5 M 16:9 : 2 M • The following function is fixed: [QUALITY]: (Standard) • [AF MODE] default setting is (Face Detection). • Face Detection may not work as effectively when using [SLIM HIGH] or [STRETCH HIGH]. • The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]
[SELF PORTRAIT]	**Take pictures of yourself.**  Tips • Press shutter button halfway → self-timer indicator illuminates → press shutter button fully → review (if self-timer indicator flashes, focus is not correctly aligned) • Focus: 30 cm - 1.2 m (0.99 - 3.94 feet) (Max. W) • Do not use zoom (harder to focus). (Zoom moved to max. W automatically) • 2-second self-timer recommended.	• To take pictures with audio (→106) (self-timer indicator illuminated during recording) • Main fixed settings: [ZOOM RESUME]: [OFF] [SELFTIMER]: [OFF]/[2SEC.] [STABILIZER]: [MODE 2] [AF ASSIST LAMP]: [OFF] • [AF MODE] default setting is (Face Detection).

How to select a scene (→61)
Using flash in Scene Modes (→48)

Scene	Uses, Tips	Notes
[SCENERY]	**Takes clear pictures of wide, distant subjects.** Tips • Stand at least 5 m (16.4 feet) away.	• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [AF ASSIST LAMP]: [OFF]
[PANORAMA ASSIST]	**Use the supplied software to join multiple pictures into a single panorama picture.** ①Use ▲▼ to select the recording direction, and press [MENU/SET] to set. Special panorama guidelines will be displayed. ②Take the picture. ③Select [NEXT], and press [MENU/SET] to set.  • Alternatively, press the shutter button. • You can take pictures again by selecting [RETAKE]. ④Change the composition and take the picture so that a part of the picture overlaps with the previous picture.  • To take more pictures, select [NEXT] and repeat steps ③ and ④. Section of picture that was taken last time ⑤After you finish taking pictures, select [EXIT], and press [MENU/SET] to set. Tips • Do not change your recording location. • Use a tripod. • When it is dark, use the self-timer to record pictures.	• The focus, zoom, Exposure Compensation, White Balance, shutter speed, and ISO Sensitivity are all fixed at the setting for the first picture. • When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds. • Interference may be noticeable with dark scenes. • Shutter may remain closed for up to 8 seconds after taking picture. • Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 - 800 • Panorama picture stitching cannot be performed by this camera. Use the software on the supplied CD-ROM 'PHOTOfunSTUDIO' to make the pictures you record into a panorama still picture with your computer. • The following functions cannot be used: [AUTO BRACKET]/[MULTI ASPECT]/[AUDIO REC.]/[BURST]
[SPORTS]	**Takes pictures of scenes with fast movement, e.g. sports.** Tips • Stand at least 5 m (16.4 feet) away.	• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second. • Main fixed setting: [INTELLIGENT ISO]: ISOMAX1600

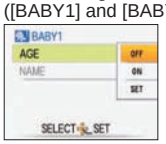
Taking pictures according to the scene

[SCENE MODE] (Continued)

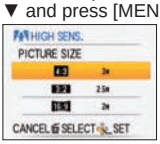
Recording Mode: MS SCN

Scene	Uses, Tips	Notes
[NIGHT PORTRAIT]	**Takes pictures of people and nightscapes with close to actual brightness.** Tips • Use flash. • Subject should not move. • Tripod, self-timer recommended. • Stand at least 1.5 m (4.92 feet) away at the Wide end (wide-angle) • Focus: Max. W: 60 cm (1.97 feet) - 5 m (16.4 feet) Max. T: 1.2 m (3.94 feet) - 5 m (16.4 feet)	• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second (or up to 8 seconds if flash is set to (Forced Flash Off)). • Interference may be noticeable with dark scenes. • Shutter may remain closed for 8 seconds after taking picture. • Main fixed setting: [PRE AF]: [OFF] • [AF MODE] default setting is (Face Detection).
[NIGHT SCENERY]	**Takes clear pictures of night scenes.** Tips • Stand at least 5 m (16.4 feet) away. • Tripod, self-timer recommended	• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds. • Interference may be noticeable with dark scenes. • Shutter may remain closed for up to 8 seconds after taking picture. • Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 - 800 [PRE AF]: [OFF] [AF ASSIST LAMP]: [OFF]
[FOOD]	**Takes natural-looking pictures of food.** Tips • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞)	–
[PARTY]	**Brighten subjects and background in pictures of indoor events, such as weddings.** Tips • Stand approx. 1.5 m (4.92 feet) away. • Zoom: Wide (W side) • Use flash. • Tripod, self-timer recommended.	• [AF MODE] default setting is (Face Detection).

How to select a scene (→61)
Using flash in Scene Modes (→48)

Scene	Uses, Tips	Notes
[CANDLE LIGHT]	**Brings out the atmosphere of a candlelit room.** Tips • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞) • Do not use flash. • Tripod, self-timer recommended.	• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second. • [AF MODE] default setting is (Face Detection).
[BABY]	**Uses weak flash to bring out skin colours.** • To record age and name ([BABY1] and [BABY2] can be set separately.)  ①Select [AGE] or [NAME] with ▲▼, press ►, select [SET], and press [MENU/SET]. ②Set the birthday and name. Age: Set birthday with ▲▼◄►, and press [MENU/SET]. Name: (See 'Entering Text': (→113)) ③Press [MENU/SET]. Tips • Make sure [AGE] and [NAME] are [ON] before taking a picture. • To reset: Select [RESET] from [SETUP] menu. • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞)	• Age and name will be displayed for approx. 5 seconds after setting this mode. • When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second. • Age display format depends on [LANGUAGE] setting. • [AGE] and [NAME] print setting can be made on your computer using the supplied CD-ROM 'PHOTOfunSTUDIO'. Text may also be stamped onto the still picture using [TEXT STAMP] (→128). • Date of birth will be displayed as [0 month 0 day]. • Main fixed setting: [INTELLIGENT ISO]: ISOMAX1600 • [AF MODE] default setting is (Face Detection).
[PET]	**Records pet's age and name when taking pictures.** Tips • Same as for [BABY]	• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second. • Default settings are as follows. [AF MODE]: (AF Tracking) [AF ASSIST LAMP]: [OFF] • Refer to [BABY] for other notes and fixed functions.
[SUNSET]	**Takes clear pictures of scenes such as sunsets.**	• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [AF ASSIST LAMP]: [OFF]

<table>
<tr><th>Scene</th><th>Uses, Tips</th><th>Notes</th></tr>
<tr><td>[HIGH SENS.]</td><td>Prevents blurring of subject in dark, indoor conditions.

Select the aspect ratio and the picture size with ▲▼ and press [MENU/SET].


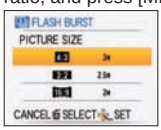
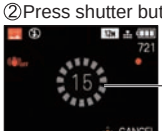
Tips
• Focus (same as macro recording)
Max. W: 3 cm (0.10 feet) and above
Max. T: 1 m (3.28 feet) and above
(5 × to 8 × is 2 m to ∞)</td><td>• Pictures may appear slightly grainy due to high sensitivity.
• Main fixed settings:
[QUALITY]: (Standard)
[SENSITIVITY]: ISO1600 - 6400
[I.RESOLUTION]: [ON]
• The following functions cannot be used:
Extra Optical Zoom/[DIGITAL ZOOM]/[MULTI ASPECT]</td></tr>
<tr><td>[HI-SPEED BURST]</td><td>Takes pictures of rapid movement or a decisive moment.

①Use ▲▼ to select [SPEED PRIORITY] or [IMAGE PRIORITY], and press [MENU/SET] to set.
②Select the aspect ratio and the picture size with ▲▼and press [MENU/SET].


③Take pictures. (Hold shutter button)
Still pictures are taken continuously while the shutter button is pressed fully.
<table>
<tr><td rowspan="2">Maximum speed*</td><td>[SPEED PRIORITY]</td><td>Approx. 10 pictures/sec</td></tr>
<tr><td>[IMAGE PRIORITY]</td><td>Approx. 6 pictures/sec</td></tr>
<tr><td rowspan="2">Number of recordable pictures*</td><td>Built-in memory</td><td>Approx. 15 or more</td></tr>
<tr><td>Card</td><td>Approx. 15 to 100 (The maximum is 100).</td></tr>
</table>
* The burst speed and number of recordable pictures change according to the recording conditions or types of cards.

Tips
• Focus (same as macro recording)
Max. W: 3 cm (0.10 feet) and above
Max. T: 1 m (3.28 feet) and above
(5 × to 8 × is 2 m to ∞)</td><td>• The number of burst recording pictures increases immediately after formatting.
• The picture quality becomes slightly lower.
• Main fixed settings:
[FLASH]: [FORCED FLASH OFF]
[QUALITY]: (Standard)
[SENSITIVITY]:
Speed priority ISO200 - 1600
Image priority ISO500 - 800
[I.RESOLUTION]: [ON]
• The focus, zoom, exposure, White Balance, shutter speed and ISO Sensitivity are fixed to the settings for the first picture.
• The following functions cannot be used:
Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELFTIMER]/[AUDIO REC.]/[BURST]
• If recording is repeated, depending on the usage conditions, there may be a delay before the camera takes pictures again.</td></tr>
</table>

How to select a scene (→61)
Using flash in Scene Modes (→48)

Scene	Uses, Tips	Notes
[FLASH BURST]	**Enables continuous recording in dim locations.** ①Use ▲▼to select the picture size and aspect ratio, and press [MENU/SET] to set.  ②Take pictures (Hold shutter button). Still pictures are taken continuously while the shutter button is held down. Number of continuous shots: Max. 5 Tips • Use within the effective range of the flash. (→48) • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞)	• The picture quality becomes slightly lower. • Main fixed settings: [FLASH]: [FORCED FLASH ON] [QUALITY]: (Standard) [INTELLIGENT ISO]: ISOMAX 3200 [I.RESOLUTION]: [OFF] • The focus, zoom, Exposure Compensation, shutter speed, and ISO Sensitivity are all fixed at the setting for the first picture. • Shutter speed is 1/30 - 1/2000 second. • The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]/[AUDIO REC.] • For details about flash (→48)
[STARRY SKY]	**Takes clear pictures of starry skies or dark subjects.** • Shutter speed settings ①Select with ▲▼, and press [MENU/SET].  • The number of seconds can be changed with Quick menu. (→112) ②Press shutter button.  Countdown begins Tips • Set longer shutter speeds for darker conditions. • Always use a tripod. • Self-timer recommended. • Do not move the camera until the countdown (above) has ended. (Countdown for processing is redisplayed afterwards)	• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 [PRE AF]: [OFF] [STABILIZER]: [OFF] • The following functions cannot be used: [EXPOSURE]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]/[AUDIO REC.]

Taking pictures according to the scene

[SCENE MODE] (Continued)

Recording Mode: MS SCN

Scene	Uses, Tips	Notes
 [FIREWORKS]	**Takes clear pictures of fireworks in the night sky.** Tips • Stand at least 10 m (32.8 feet) away. • Tripod recommended.	• Shutter speed can be set to 1/4 second or 2 seconds (if there is a little jitter or if Optical Image Stabilizer is [OFF]). (when not using Exposure Compensation) • Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 [PRE AF]: [OFF] [AF ASSIST LAMP]: [OFF]
 [BEACH]	**Brings out the clear blues of the sky and the sea without darkening subject.**	• [AF MODE] default setting is (Face Detection). • Do not touch camera with wet hands. • Beware of sand and sea water.
 [SNOW]	**Brings out the natural colour of snow in ski slope and mountain scenes.**	• Battery life is reduced in lower air temperatures.
 [AERIAL PHOTO]	**Takes pictures of the view from aircraft windows.** Tips • Angle the camera towards areas of contrasting colours when aligning the focus. • Check that the interior of the aircraft is not reflected in the window. • Stand at least 5 m (16.4 feet) away.	• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [AF ASSIST LAMP]: [OFF] • **Turn the camera off when taking off or landing.** • **When using the camera, follow all instructions from the cabin crew.**
 [PIN HOLE]	**Darkens the area around the screen for a retro effect.** Tips • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞)	• The Face Detection function (→99) may not work properly in the darkened area around the screen. • [I.RESOLUTION] is fixed to [OFF]. • The following functions cannot be used: Extra Optical Zoom/ [DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/ [BURST]

How to select a scene (→61)
Using flash in Scene Modes (→48)

<table>
<tr><th>Scene</th><th>Uses, Tips</th><th>Notes</th></tr>
<tr><td>
[FILM GRAIN]</td><td>Produces black and white pictures with a grainy texture.

Tips
• Focus (same as macro recording)
Max. W: 3 cm (0.10 feet) and above
Max. T: 1 m (3.28 feet) and above
(5 × to 8 × is 2 m to ∞)</td><td>• Main fixed settings:
[SENSITIVITY]: ISO1600
• The following functions cannot be used:
[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]</td></tr>
<tr><td>
[HIGH DYNAMIC]</td><td>Reduces over- and underexposure when recording into the light and in night scenes.

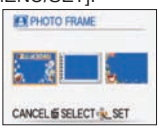
Use ▲▼ to select the effect and press [MENU/SET].
<table><tr><td>STD</td><td>Natural colouring effect</td></tr><tr><td>ART</td><td>An impressionistic effect emphasizing contrast and colour</td></tr><tr><td>B&W</td><td>Monochrome effect</td></tr></table>• You can also change the settings in the Quick menu. (→112)

Tips
• Focus (same as macro recording)
Max. W: 3 cm (0.10 feet) and above
Max. T: 1 m (3.28 feet) and above
(5 × to 8 × is 2 m to ∞)</td><td>• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.
• The following function is fixed:
[SENSITIVITY]: 400
• Depending on recording conditions, the correction effect may not work.
• After recording, the shutter may stay closed (up to 8 seconds) to process the signal. This is not a defect.
• Because dark areas are corrected to be lighter, there may be more noticeable noise on the LCD screen than with ordinary recording.</td></tr>
</table>

Taking pictures according to the scene

[SCENE MODE] (Continued)

Recording Mode: MS SCN

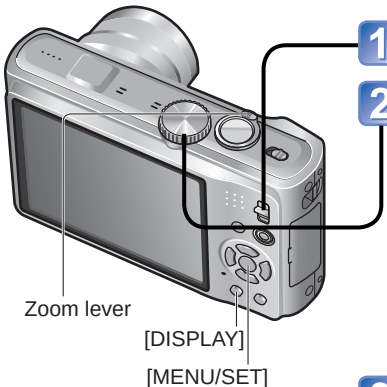
Scene	Uses, Tips	Notes
[PHOTO FRAME]	**A frame is superimposed over the image.** Press ◄► to select the frame, and then press [MENU/SET]. 	• The recording pixel level is 2 M (4:3). • The following function is fixed: [AUTO REVIEW]: [2 SEC.] • The colour of the frame displayed on the screen may differ slightly from the colour of the frame on the still picture that is recorded. • Guide lines cannot be displayed. • The following functions are not available. Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]
[UNDERWATER]	**Achieve natural colours under water.** Tips • For fast moving subjects, align with the AF area and press ◄ (**AF Lock**). (Press ◄ again to release.) • If the zoom is operated after AF Lock is set, the AF Lock setting will be cancelled and must be set again. • AF Lock cannot be set if [AF MODE] is set to . • Adjust red and blue levels with 'White Balance fine adjustment' (→98). • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞)	• **Always use marine case (optional).** • Positioning is not possible underwater, because the GPS signals cannot reach the camera. • Self-timer: Cannot be used 

Registering commonly used scenes

[MY SCN MODE]/[MY SCENE MODE]

Recording Mode: MS

You can register a commonly used Scene Mode in MS1 MS2 (MS for TZ8 ZS5) on the mode dial.
After the settings are made, pictures can be taken in the preset Scene Mode by simply setting the mode dial to MS1 MS2 (MS for TZ8 ZS5).



1 **Set to** 📷

2 **Set to MS1/MS2 (MS for TZ8 ZS5)**



DMC-TZ10
DMC-ZS7
MS1
MS2



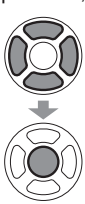
DMC-TZ8
DMC-ZS5
MS



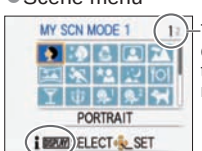
If you have already registered in My Scene Mode, it is displayed as a registered scene.

3 **Select and set the scene**

(Press [MENU/SET], select SCN, and then press ►, if the scene menu is not displayed.)



● Scene menu



The zoom lever can also be used to switch to the next screen.

To see a description of a scene:
Select the scene, and press [DISPLAY].

■Taking pictures in registered Scene Modes

Set the mode dial to MS1 MS2 (MS for TZ8 ZS5), and take a picture.
• Functions, tips for each scene (→62 - 70)

■Changing registered Scene Modes

Perform the registration operation again

■Taking motion pictures

TZ10 ZS7

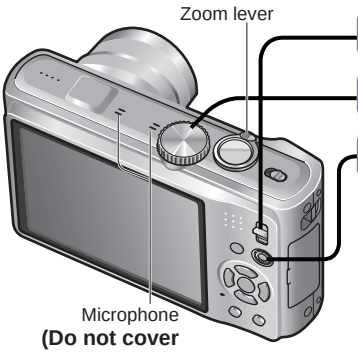
(→72)

- MS1 and MS2 TZ10 ZS7
 Both represent the same function. Frequently-used scenes can be preset to each position so that you can quickly and easily switch to the desired Scene Mode.
- For details on the preset scenes, see the pages on Scene Modes.
- If recording settings are reset by [RESET] in the [SETUP] menu, the preset Scene Modes are cleared.

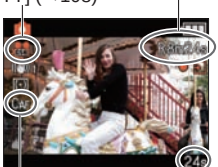
Taking motion pictures

Recording Mode: iA P A S M MS1 MS2 SCN

Enables motion pictures to be recorded with (stereo) audio. (Recording with muted sound is not possible.) Zoom can also be used during recording.



■About the motion picture recording screen



■Changing motion picture settings

(→108)

■Playing back motion pictures

(→115)

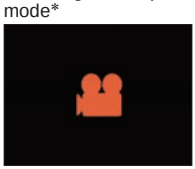
1 Set to 📷

2 Set to a position other than

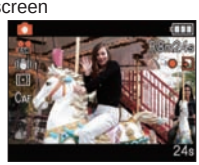
3 Press to start recording

There is no halfway pressing operation.
Recording is started after switching to the motion picture recording screen.

Switching motion picture mode*



Motion picture recording screen



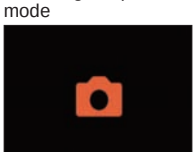
*Actual screen displayed may vary according to [REC MODE].

You can also use zoom while recording motion pictures.

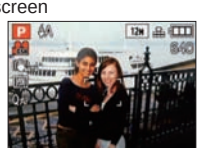
- The zoom speed will be slower than normal. Also, the zoom speed changes according to the zoom range.
- When using zoom while recording motion pictures, it may take some time to focus.

4 Press the motion picture button again to end recording

Switching still picture mode



Still picture recording screen



For the operating procedures for the DMC-TZ8/DMC-ZS5 (→76)

■Motion picture recording format ([REC MODE])

The camera can be changed between motion picture recording formats ([REC MODE]) when recording.
[REC MODE] Mode can be set from the motion picture recording menu. (→108)

Motion picture recording format ([REC MODE])	Features
[AVCHD Lite(GPS REC)]*1	• Can record high-definition motion pictures. • Can record high-definition motion pictures longer than [MOTION JPEG] on cards of the same size. • Pictures can be played back by inserting the card in an AVCHD-compatible device.*2
[AVCHD Lite]*1	
[MOTION JPEG]	• You can record high-definition motion pictures or small QVGA size motion pictures, etc, by changing picture quality settings. • Recorded motion pictures can be played back with 'QuickTime' on a PC, etc. • Continuous recording time is available until the motion picture data volume reached 2 GB. To continue recording, press the motion picture button and begin recording again.

*1 When the term "AVCHD Lite motion picture" is used in this manual, it means a motion picture recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite].
*2 Correct playback may not be possible with some compatible devices. Also, motion pictures recorded in [AVCHD Lite(GPS REC)] cannot be played back with Panasonic digital cameras (LUMIX) compatible with AVCHD (Lite) recording that were sold in or before 2009.

- When [GPS SETTING] is [ON] or GPS, the location name information from the start of recording is recorded on motion pictures that are recorded in [AVCHD Lite(GPS REC)] or [MOTION JPEG]. (When positioning succeeds and location name information is acquired)

■Recording motion pictures in iA

The camera automatically detects the scene to record motion pictures with optimal settings.

iA When scene does not correspond to any on the right.	[i PORTRAIT]	[i LOW LIGHT]
	[i SCENERY]	[i MACRO]

- If brightness or other conditions change during recording, the Scene Mode will be changed automatically.
- In [i PORTRAIT] mode, focus and exposure will be set according to the face detected.
- [i LOW LIGHT] will be selected for nightscapes and other dark scenes. Flash cannot be used with this mode.
- If conditions do not allow scenes to be detected easily (→35).
- If the camera does not select your desired Scene Mode, choosing an appropriate mode manually is recommended.
- The following menu options in the [MOTION PICTURE] menu can be set:
 - [REC MODE] • [REC QUALITY]
- The following functions are fixed:
 - [DIGITAL ZOOM]: [OFF] • [WIND CUT]: [OFF]
 - [WHITE BALANCE]: [AWB] • [AF MODE]: (Face Detection)* • [CONTINUOUS AF]: [ON]
 - * [■] 1-area-focusing turns on when faces cannot be detected.
- [I.EXPOSURE] is activated automatically based on the conditions.

Taking motion pictures (Continued)

Recording Mode: iA P A S M MS1 MS2 SCN

■Recording motion pictures in P A S M

Records a motion picture at your preferred settings.

- Aperture and shutter speed are automatically set.
- The Recording Mode icon changes to .

■Recording motion pictures in MS1 MS2 SCN

Records a motion picture at the optimum settings for the selected scene.

- Some scenes are switched to the following scenes:

Selected scene	Scenes for motion picture
[BABY]	(Portrait motion picture)
[NIGHT PORTRAIT], [NIGHT SCENERY], [STARRY SKY]	(Low light motion picture)
[PANORAMA ASSIST], [SPORTS], [PET], [HI-SPEED BURST], [FLASH BURST], [FIREWORKS], [PHOTO FRAME]	Normal motion picture

- [I.EXPOSURE] is activated automatically, based on conditions depending on the Scene Mode.
- The following items cannot be set in some Scene Modes:
 - [WHITE BALANCE]
 - [DIGITAL ZOOM]

■Recording motion pictures in CUST

Records motion pictures in registered Recording Mode.

Recordable time on 2 GB SD memory card

For details (→174)

[REC MODE]	[REC QUALITY]	Recording picture capacity (estimate)
[AVCHD Lite(GPS REC)]/ [AVCHD Lite]	[GSH]/[SH]	Approx. 15 min
	[GH]/[H]	Approx. 20 min
	[GL]/[L]	Approx. 29 min
[MOTION JPEG]	[HD]	8 min 20 s
	[WVGA]	20 min 50 s
	[VGA]	21 min 40 s
	[QVGA]	1 h

- Press [DISPLAY] before recording to display the recordable time in the current Recording Mode and the picture quality.



Available recording time

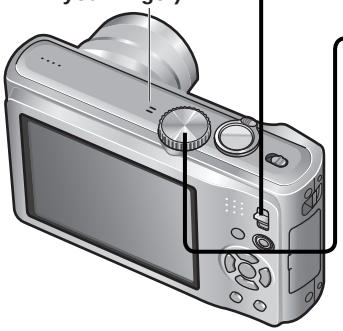
For the operating procedures for the DMC-TZ8/DMC-ZS5 (→76)

- **For information on the available recording time (→174)**
- **Using a card of SD speed 'Class 4'* or above is recommended for recording motion pictures in [AVCHD Lite(GPS REC)]/ [AVCHD Lite].**
 Using a card of SD speed 'Class 6'* or above is recommended for recording motion pictures in 'MOTION JPEG'.
 * **The SD speed class is a speed rating for continuous writing.**
- Depending on the type of card, a card access message may appear for a while after recording a motion picture. This is not a defect.
- If data is repeatedly recorded and deleted, the total available recording time on the SD card may be reduced. To restore the original capacity, use the camera to format the SD card. Be sure to save all important data to your computer or other media before formatting, as all data saved to the card will be erased.
- Immediately release the motion picture button after pressing it.
- Sounds of camera operations, such as zoom movement and beeps may be recorded.
- [STABILIZER] is fixed at [MODE 1] regardless of the setting before motion picture recording.
- To fix the focus setting, set [CONTINUOUS AF] to [OFF].
- The following functions are not available:
 Extra Optical Zoom, flash, [FACE RECOG.], [ROTATE DISP.] for pictures taken vertically.
- Recording automatically ends when there is no more available space. For certain memory cards, recording may end while in progress.
- The screen can become narrower in motion pictures compared to still pictures. Also, if the Aspect Ratio is different for still pictures and motion pictures, the angle of view will change when starting to record a motion picture. The recordable area is displayed by setting [REC AREA] (→24) to [ON].
- If Extra Optical Zoom was used before pressing the motion picture button, these settings will be cleared, and the recordable area will be larger.
- [QVGA] in [REC QUALITY] (→108) can only be recorded to the built-in memory.
- Fast-moving subjects in motion pictures may appear blurred during playback.
- Depending on the environment when recording motion pictures, the screen may turn black for an instant or noise may be recorded because of static electricity, electromagnetic waves, etc.
- It may not be possible to play back motion pictures recorded in [MOTION JPEG] on Panasonic digital cameras (LUMIX)*. (Motion pictures recorded on Panasonic digital cameras (LUMIX) can be played back on this camera.)
 * Applies to LUMIX cameras sold through December 2008 and some sold in 2009 (FS, LS series).
- When recording motion pictures, it is recommended to use a sufficiently charged battery or an AC adaptor (optional) and DC coupler (optional).
- When recording motion pictures using an AC adaptor, if you unplug the AC adaptor or a power outage occurs, power to the camera is cut, and the motion picture in progress is no longer recorded.

Taking motion pictures [MOTION PICTURE] Mode

Recording Mode:

This records motion pictures with audio. (Recording with muted sound is not possible. Sound recording is monaural.) Zoom can also be used during recording.



1 Set to

2 Set the mode dial to

3 Start recording



Press halfway (adjust the focus)

Press fully (start recording)

You can also use zoom while recording motion pictures.

- The zoom speed will be slower than normal. Also, the zoom speed changes according to the zoom range.
- When using zoom while recording motion pictures, it may take some time to focus.

4 End recording



Press fully



- **For information on the available recording time (→176)**
- Depending on the type of card used, a card-access display may appear for a while after motion picture recording. This does not indicate a problem.
- Immediately release the shutter button after pressing it all the way.
- Easy zoom cannot be used while recording a motion picture.
- The following functions are not available.
 Extra Optical Zoom, flash, [FACE RECOG.] and [ROTATE DISP.] for still pictures taken vertically.
- Sounds of camera operations, such as zoom movement and beeps may be recorded.
- In [AF MODE], [■] (1-area-focusing) is fixed:
- In [STABILIZER], [MODE 1] is fixed.
- To fix the focus setting, set [CONTINUOUS AF] to [OFF]
- When there is no space left to store the motion picture, recording automatically ends. Additionally, recording in progress may be stopped, depending on the card used.
- Depending on the motion picture recording environment, static electricity or electromagnetic waves may cause the screen to go black momentary or noise to be recorded.

For the operating procedures for the DMC-TZ10/DMC-ZS7 (→72)

Playing back motion pictures (→115)

[REC QUALITY]

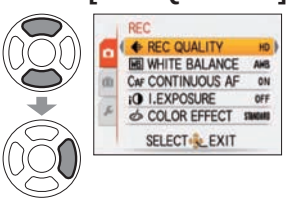
Changing the motion picture size. When recording a motion picture, use a card rated with an SD speed class*1 of ‘Class 6’ or higher.

*1 SD speed class refers to a specification for sustained write speeds.

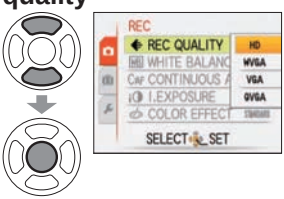
1 Display the [REC] menu



2 Select [REC QUALITY]



3 Select the desired picture quality



4 Close the menu



Picture Quality	Picture Size	No. of Frames	Picture Aspect Ratio
[HD]	1280 × 720 pixels	30 fps	16:9
[WVGA]	848 × 480 pixels		
[VGA]	640 × 480 pixels		4:3
[QVGA]*2	320 × 240 pixels		

*2 [QVGA] is fixed when recording to built-in memory.

- When recording motion pictures, it is recommended to use a sufficiently charged battery or an AC adaptor (optional) and DC coupler (optional).
- When recording motion pictures using an AC adaptor, if you unplug the AC adaptor or a power outage occurs, power to the camera is cut, and the motion picture in progress is no longer recorded.
- If you attempt to play motion pictures recorded with the camera on other devices, playback may not be possible, or the picture or sound quality may be poor. Additionally, incorrect recording information may be indicated.
- Motion pictures recorded with the camera cannot be played on Panasonic LUMIX digital cameras sold before July 2008. (However, motion pictures recorded with LUMIX digital cameras sold before this date can be played on this camera.)

Recording with the Face Recognition function

[FACE RECOG.]

Recording Mode: iA P A S M MS SCN

To enable the Face Recognition function, register a face picture (→79), or set the automatic registration of face pictures (→82) to [ON]. (The Face Recognition function is not enabled at the time of purchase.)

■How the Face Recognition function works



During recording

- The camera recognises a registered face and adjusts focus and exposure
- When registered faces that have set names are recognised, the names are displayed (up to 3 people)
- When [AUTO REGISTRATION] is [ON], faces that have been recorded many times are recognised and the registration screen is displayed

During playback

- The name and age are displayed (if information is registered)
- During recording, the names that have been set for the recognised faces are displayed (up to 3 people)
- Only pictures of the selected registered people are played back ([CATEGORY PLAY])

- [AF MODE] is fixed to (Face Detection).
- When Burst is performed, recording information relating to Face Recognition is put only on the first picture.
- If you press the shutter button halfway, then point the camera at a different subject and record, recording information for a different person may be put on the picture.
- Face Recognition does not work in the following cases:
 [CLIPBOARD] Mode, motion picture recording, Scene Modes [TRANSFORM], [PANORAMA ASSIST], [NIGHT SCENERY], [FOOD], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [FIREWORKS], [AERIAL PHOTO], [FILM GRAIN], [UNDERWATER]
- Face Recognition searches for faces similar to those registered, but there is no guarantee it will always recognise these faces.
- Face Recognition works by looking at certain facial characteristics and as a result takes longer than ordinary Face Detection.
- Even if Face Recognition information is registered, pictures recorded when the name is [OFF] are not categorized for Face Recognition in [CATEGORY PLAY].
- **Even if Face Recognition information is changed (→81), Face Recognition information for previously recorded pictures is not changed.**
 For example, if a name is changed, pictures recorded before the change are not categorized for Face Recognition in [CATEGORY PLAY].
- To change name information for pictures already recorded, perform a [REPLACE] (→136) in [FACE REC EDIT].

Registering face pictures

Up to 6 people's face pictures can be registered along with such information as name and birth date.
You can facilitate Face Recognition by the way you register faces: for example, register multiple face pictures of the same person (up to 3 pictures in one registration).

■Recording tips when registering face pictures

- Make sure the subject's eyes are open and mouth closed; have the subject face the camera directly, and make sure the outline of the face, the eyes and eyebrows are not hidden by hair.
- Make sure there are no heavy shadows on the face. (During registration, the flash is not used).

■If the camera seems to have difficulty recognizing faces when recording

- Register additional pictures of the same person's face, indoors and outdoors or with different expressions or angles.
- Register additional pictures at the place you are recording.
- Change the [SENSITIVITY] settings.
- If a registered person is no longer recognised, re-register that person.

● In some cases, the camera cannot recognise or incorrectly recognises even registered people depending on their expression or the environment.

- The eyes or eyebrows are hidden by hair
- The subject is not facing the camera directly
- The subject's eyes are closed
- The subject is dark or lit from a vertical angle
- The subject is facing up or down
- It is extremely bright or dark
- The image of the subject is too small
- The subject's facial features have changed with age
- The subject's expression is very different
- The subject's entire face is not in the screen
- The subject has very similar facial features as a family member, etc.
- There is little shadow on the face
- The subject is moving rapidly
- The photographer is jittering
- Digital Zoom is being used
- The subject's face is hidden by sunglasses, eyeglasses reflecting light, hair, a hat, etc.

Recording with the Face Recognition function

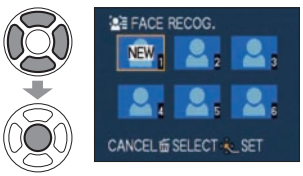
[FACE RECOG.] (continued)

Recording Mode: iA P A S M MS SCN

1 Select [FACE RECOG.] from the [REC] menu (→20)

2 Select [MEMORY] with ▲▼, and then press [MENU/SET]

3 Select the frame for the unregistered face picture



- If 6 people are already registered, first delete a registered person. (→81)

4 Record the face picture



① Align the face with the guide and record.
② Select [YES] with ▲▼, and then press [MENU/SET].
- If re-recording, select [NO]

- Faces of subjects other than people (e.g. pets) cannot be registered.
- If recognition fails, a message is displayed and the display returns to the recording screen. Try recording again.
- When [DISPLAY] is pressed, an explanation is displayed.

5 Select the item to edit and make the setting

Item	About settings
[NAME]	① Select [SET] with ▲▼, and then press [MENU/SET] ② Enter the name (text input procedure: →113)
[AGE]	Set the birth date. ① Select [SET] with ▲▼, and then press [MENU/SET] ② Use ◄► to select year, month and day, set with ▲▼, and press [MENU/SET]
[FOCUS ICON]	Change the icon that is displayed when the subject is in focus. ① Select the focus icon with ▲▼, and then press [MENU/SET]
[ADD IMAGES]	Up to 3 face pictures of the person can be registered. ① Select an unregistered frame and press [MENU/SET] • When a registered face picture is selected with ◄►, a screen to confirm deletion is displayed. Select [YES] to delete the face picture. (If only one picture is registered, it cannot be deleted.) ② Record the picture (Step 4 above.) ③ Press 🗑

6 Press the shutter button halfway to close the menu

■**To set the Face Recognition function to [OFF]**

① Select [FACE RECOG.] from the [REC] menu (→20)
② Select [OFF] with ▲▼, and then press [MENU/SET]

- When a face picture is registered or automatic registration of face pictures is set, the [FACE RECOG.] setting is switched to [ON] automatically.

Editing or deleting information about registered persons

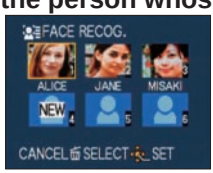
Information about registered people can be edited or deleted.

1 Select [FACE RECOG.] from the [REC] menu (→20)

2 Select [MEMORY] with ▲▼, and then press [MENU/SET]

3 Select the person whose information you wish to edit or delete





- When an unregistered frame is selected, a new registration occurs.

4 Select the item



Item	About settings
Information editing	Edit name or other registered information. (→80)
Registration order	Set priority order for focus and exposure. ① Select the registration order with ▲▼◄►, and then press [MENU/SET]
Deleting	Deletes information and face pictures of registered persons.

5 Press the shutter button halfway to close the menu

Automatically register face pictures

You can set the camera so that the registration screen automatically displays after recording a subject that is recorded many times.

1 Select [FACE RECOG.] from the [REC] menu (→20)

2 Select [SET]



3 Select [AUTO REGISTRATION]





4 Select [ON]





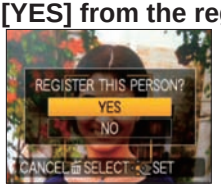
5 Press the shutter button halfway to close the menu

- In some cases it may be very difficult to recognise faces that have only been registered by automatic registration. From the [REC] menu's [FACE RECOG.], register face pictures in advance.

■Register face pictures from the automatic registration screen

1 Select [YES] from the registration confirmation screen





- If Face Recognition is not registered, proceed to 3.
- If [NO] is selected, a re-confirmation screen is displayed.
 If [YES] is selected here, [AUTO REGISTRATION] is turned to [OFF].

2 Select [NEW PERSON] or [ADDITIONAL IMAGE]



Item	About settings
[NEW PERSON]	If 6 people are already registered, select a person to replace.
[ADDITIONAL IMAGE]	Select the person for which you are registering additional face pictures • If 3 face pictures are already registered, select a picture to replace.

3 Select the item to edit and make the setting (Step 5) **(→80)**

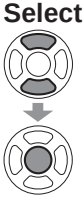
- The registration screen is displayed for the third time (estimate). (This does not occur in [SELF PORTRAIT] Scene Mode, [BURST], [AUDIO REC.], [AUTO BRACKET] or [MULTI ASPECT].)
- If the registration screen is not displayed easily, recording in the same environment and with the same expression will make it display more easily.
- If a face is not recognised despite being registered, re-registering the person from [REC] menu's [FACE RECOG.] at that location will make it easier for the camera to recognise the person.
- If the registration screen is displayed for a person already registered, making additional registration of the person in that status will make it easier for the camera to recognise the person.
- If a picture recorded with a flash is registered, it may be difficult for the camera to recognise the person.
- When [AUTO REGISTRATION] is set to [ON], the [FACE RECOG.] setting is also switched to [ON] automatically.

Setting recognition sensitivity

The Sensitivity setting of the camera can be set if it is having difficulty with Face Recognition or making mistakes.

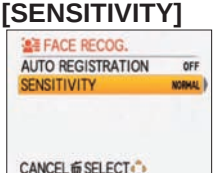
1 Select [FACE RECOG.] from [REC] menu (→20)

2 Select [SET]

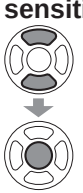


3 Select [SENSITIVITY]





4 Select the level of a sensitivity setting



[HIGH]: Set when camera is having difficulty recognizing faces
[NORMAL]: The usual setting
[LOW]: Set when the camera frequently recognises a face as that of a different person

5 Press the shutter button halfway to close the menu

- Setting [SENSITIVITY] at [HIGH] makes it easier for the camera to recognise faces but also increases the possibility of recognizing the face as that of a different person.

Recording the place of recording with GPS

Recording Mode: iA P A S M MS1 MS2 SCN * * Record only (Cannot set)

What is GPS?
GPS is an abbreviation for Global Positioning System, which enables people to find their locations using GPS satellites.
Receiving signals that include orbit information and time information from multiple satellites to calculate one's current location is referred to as “Positioning”.
This camera can perform positioning when it receives signals from three or more GPS satellites.

■GPS functions

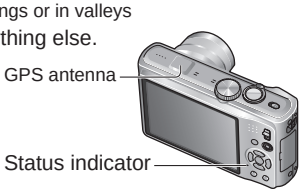
When GPS is used, the camera performs the following functions:

- Records location name information and the latitude and longitude for the positioned location on the recorded pictures*1
- Corrects automatically to the current time*2
- Corrects the time to the local time after moving to a country or region in a different time zone*2

*1 Still pictures or motion pictures recorded in [AVCHD Lite(GPS REC)] or [MOTION JPEG]
*2 When [AUTO CLOCK SET] or [WORLD TIME] is set to [AUTO]

■Receiving signals from GPS satellites

- Set [GPS SETTING] to [ON] or GPS (→85)
- When using the GPS, we recommend holding the camera still for a while with the GPS antenna facing upward in an outdoor location where you can see the entire sky.
- Positioning usually takes less than two minutes, but because the positions of the GPS satellites change over time, it may take longer depending on the recording location and environment.
- In the following types of locations, it may not be possible to correctly receive the signals from the GPS satellites. In such cases, positioning may not be possible, or significant positioning discrepancy may occur.
 - Indoors
 - Underground or underwater (when using a marine case)
 - In tunnels
 - Near 1.5 GHz mobile phones, etc.
 - Near high-voltage power lines
 - In forests
 - Near buildings or in valleys
- Do not cover the GPS antenna with your hands or anything else.
- If you are carrying the camera during positioning, do not carry it in a metal carrier or similar container. Positioning cannot be performed when the camera is covered by a material such as metal.



■Using in locations such as airplanes or hospitals

When [GPS SETTING] is set to [ON], the GPS function operates even when the camera's power is off.
When turning off the camera’s power in an airplane, hospital or other restricted area, set [GPS SETTING] to [OFF] or GPS (→85)

- If the status indicator flashes periodically while the camera’s power is off, [GPS SETTING] is set to [ON].

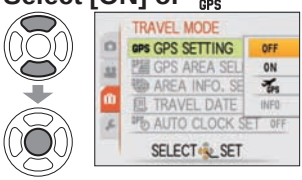
[GPS SETTING] is not available in the DMC-TZ8/DMC-ZS5.

Before use, read “About GPS” (→8) and “User License Agreement for Location Name Data” (→165).

[GPS SETTING]: Using GPS

1 Select [GPS SETTING] from the Travel Mode menu (→20)

2 Select [ON] or GPS



- To cancel, select [OFF]

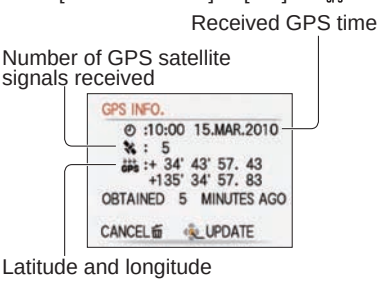
3 Close the menu



■When checking GPS reception

Select [INFO] in Step 2 to check the current reception.

- Set [GPS SETTING] to [ON] or GPS



- Press [MENU/SET] to start positioning

[GPS SETTING]	Description	Positioning operation timing
[ON]	● Positioning continues even when the camera’s power is off, so you can record pictures with location name information recorded on them as soon as you turn on the power again. ● Because the positioning continues even when the camera’s power is off, battery power is consumed. ● When the camera’s power is off, the positioning stops in the following cases. If the positioning stops, the positioning will take some time, after turning on the camera’s power. • When the battery level is low, comes on, or the battery is replaced • When positioning is not successful for 2 hours after the camera’s power is turned off • When the camera’s power has not been turned on for 3 hours	When the camera’s power is on • Immediately after the power is turned on • Every 5 minutes When the camera’s power is off* • Every 15 minutes *The status indicator flashes when positioning.
GPS	● The positioning may take some time, after turning on the camera’s power. Location name information will not be recorded for pictures recorded at this time while positioning is in progress.	When the camera’s power is on* • Immediately after the power is turned on • Every 5 minutes *Positioning is not performed when the camera’s power is off.

● Positioning is not possible unless signals are received from three or more GPS satellites. Move to a location where the sky is as clear as possible before performing positioning.

Recording the place of recording with GPS (continued)

Recording Mode: iA P A S M MS1 MS2 SCN * * Record only (Cannot set)

■When [GPS SETTING] is set to [ON] or GPS

In Recording Mode, an icon that indicates the positioning status is displayed on the LCD monitor.
Then, if positioning is successful, the location name information is displayed.



Location name information

Positioning (5 minutes maximum)

Icon	Status
GPS 5	Location name information exists (information from the last 5 minutes).
GPS 60	Location name information exists (information from 5 minutes to 1 hour ago).
GPS 120	Location name information exists (information from 1 hour to 2 hours ago).
GPS 120+	Location name information exists (information from more than 2 hours ago).
GPS	Positioning failed (no location name information).

- **When using the camera for the first time or after not using it for a while, positioning may take several minutes, because it may take some time to acquire the orbit information from the GPS satellites.**
- If positioning is successful, the current position is saved.
 However, note that the saved position information is deleted in the following cases:
 - When [GPS SETTING] is set to [OFF]
 - When [GPS SETTING] is set to GPS and then the camera's power is turned off
 - When the setup settings are reset with [RESET]
- In the following cases, the location name information that will be recorded on the picture may vary significantly from the current position. Check the location name and other information before recording.
 - Immediately after turning on the camera's power • When the icon is something other than GPS 5
- Positioning is not performed in the following situations:
 - During motion picture recording • During audio recording

■Information recorded on recorded pictures

When positioning is successful, the current position is saved in the camera and the latitude, longitude and location name information are recorded on the recorded still pictures and motion pictures recorded in [AVCHD Lite(GPS REC)] or [MOTION JPEG].

- Information recorded on recorded pictures
 - Latitude/longitude
 - Location name information (country or region name/prefecture, state or province name/city or town name/landmark name)*

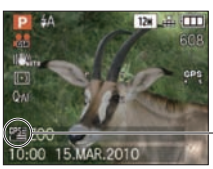
* You can use the camera or the 'PHOTOfunSTUDIO' software on the supplied CD-ROM to check the recording location of pictures or display them by location of recording.

[GPS SETTING] is not available in the DMC-TZ8/DMC-ZS5.

- The location name information consists of location names and landmarks that are found via a search of the camera's database based on the latitude and longitude that were acquired in positioning, and the most appropriate items are displayed in the following order of priority. (Sometimes the nearest items are not displayed.)
 ① Landmark names and the corresponding location names within 1 km of the current position
 ② Location names for places with landmarks or other points of interest within 10 km of the current position
 - If there are no location names or landmarks that comply with the conditions above, "---" is displayed. Even when "---" is displayed, in some cases location name information can be selected in [GPS AREA SELECT].
 - In some cases, the landmark that you are looking for may not have been registered. Landmarks and other location name information are current as of February 2010. (Landmark types →173)
- The location name information (location name or landmark name) may be different from the official name.

Change the recorded place name information

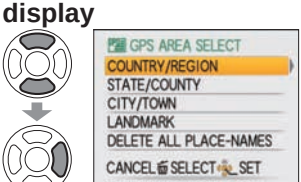
If positioning results and current position are different from each other, or if there are other candidate locations, you can change the information to nearby place names or landmarks.



Displayed when other location name information can be selected.

1 Select [GPS AREA SELECT] (→20), from the [TRAVEL MODE] menu

2 Select the item to change display



3 From the displayed candidates, select the desired place name or landmark to be recorded



4 Return to the menu screen

Q.MENU

Recording the place of recording with GPS (continued)

Recording Mode: iA P A S M MS1 MS2 SCN * * Record only (Cannot set)

■If you do not wish to record place names and landmarks

In step 2, select [DELETE ALL PLACE-NAMES] and place names and landmarks will not be recorded.

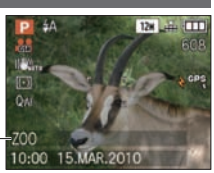
Or, in step 3, if you select [YES] when a message asking whether to delete place names and landmarks lower than the selected place name, information of the place name will not be recorded (e.g., city and town names and landmarks if specifying a prefecture name).

- However, longitude and latitude will be recorded. If you do not wish to record them, turn [GPS SETTING] to [OFF].

● In large public parks or similar locations, landmarks may not be displayed, or incorrect landmarks may be displayed. If you cannot select the desired landmark in [GPS AREA SELECT], perform [PLACE-NAME EDIT] after recording. (→127)

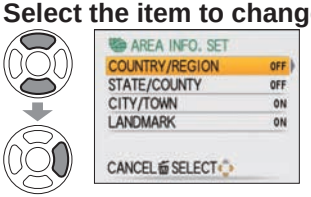
Changing the display of location name information

The screen display of location name information found by positioning can be changed.

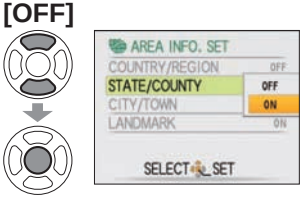


1 Select [AREA INFO. SET] (→20) from the [TRAVEL MODE] menu

2 Select the item to change the display



3 Turn items to be displayed [ON] and items not to be displayed [OFF]



[GPS SETTING] is not available in the DMC-TZ8/DMC-ZS5.

4 Return to the menu screen

Q.MENU



- In the following cases, "- - -" is displayed.
 - There is no location name information to display
 - There are no nearby landmarks (It may be possible to select landmarks in [GPS AREA SELECT].)
- When the text of the location name information is long, such as when multiple items are set for display, a scroll display is used.

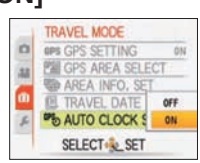
Using GPS to set the Clock

Using the date and time information in the GPS signal, the camera can automatically update its [CLOCK SET]. Also, after moving from your home area to one in a different time zone, the time is changed to the local time automatically when positioning is successful. Perform [CLOCK SET] in advance.

1 Select [AUTO CLOCK SET] (→20) from the [TRAVEL MODE] menu

2 Select [ON]





3 Perform the operations from step 6 in "Setting the Clock" (first time only) (→17)

- During positioning, if there is a difference of 1 minute or more between the GPS time information and the [CLOCK SET] time, the time is corrected automatically.
- When [AUTO CLOCK SET] is turned to [ON], [WORLD TIME] is set to [AUTO].
- When [WORLD TIME] is set to something other than [AUTO], [AUTO CLOCK SET] is turned to [OFF].
- Time and date corrected by [AUTO CLOCK SET] is not as accurate as radio clocks. If the time and date are not properly corrected, reset with [CLOCK SET].

Useful features for travel [TRAVEL MODE]

Recording Mode: iA* P A S M MS SCN * TZ8 ZS5

TZ8 ZS5

• If items have been set, the settings for each item are displayed.



The menu name for the selected item is displayed.

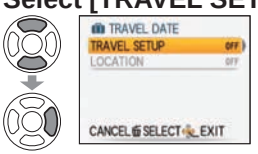
[TRAVEL DATE] TZ10 ZS7

If you set your travel schedule and record pictures, which day of your trip the picture was recorded will be recorded.

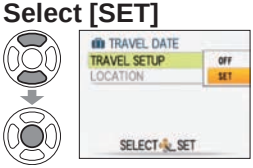
Set-up: • Clock must be set in advance (→17).

1 Select [TRAVEL DATE] from the [TRAVEL MODE] menu (→20)

2 Select [TRAVEL SETUP]



3 Select [SET]



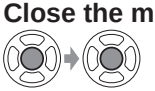
4 Set the departure date



5 Set the return date in the same way

• The colour of the date frame from the departure date to the return date changes.

6 Close the menu



■Clearing the information

After the return date, the information is automatically cleared. To clear the information before this date, select [OFF] in step 3.

• If [TRAVEL SETUP] is turned [OFF], [LOCATION] is also automatically turned [OFF].

- The number of days elapsed is displayed for approx. 5 sec. when switching from Playback to Recording Mode or when power is turned on. (displayed at bottom-right of screen)
- The travel date is calculated from the set departure date and the date set in the camera's Clock. When destination is set in [WORLD TIME], days elapsed are calculated based on local destination time.
- The set travel date is saved even when the camera's power is turned off.
- When [TRAVEL SETUP] is set to [OFF], the number of days elapsed is not recorded. It is not displayed even if [TRAVEL SETUP] is set to [SET] after recording.
- If settings are made before the departure date, the number of days to departure are displayed in orange with a minus sign (but not recorded).

* Recording only. (Cannot set.)

- When [TRAVEL DATE] is displayed in white with a minus sign, the [HOME] date is one day in advance of the [DESTINATION] date (this is recorded).
- To print the number of days that have passed, either use [TEXT STAMP] or print using the software on the supplied CD-ROM 'PHOTOfunSTUDIO'.
- [TRAVEL DATE] cannot be set for motion pictures recorded in [AVCHD Lite].

[TRAVEL DATE] TZ8 ZS5

If you set your travel schedule and record pictures, which day of your trip the picture was recorded will be recorded.

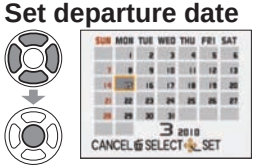
Set-up: • Clock must be set in advance (→19).

1 Select [TRAVEL DATE] from [TRAVEL MODE] menu (→20)

2 Select [SET]



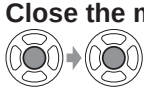
3 Set departure date



4 Set the return date in the same way

- The colour of the date frame from the departure date to the return date changes.

5 Close the menu



- The departure date and return date you set are displayed on the [TRAVEL MODE] menu screen.

■Clearing the information

After the return date, the information is automatically cleared. To clear the information before this date, select [OFF] in step 2.

- If [TRAVEL DATE] is turned [OFF], [LOCATION] is also automatically turned [OFF].

- The number of days elapsed is displayed for approx. 5 sec. when switching from playback to Recording Mode or when power is turned on. (displayed at bottom-right of screen)
- The travel date is calculated from the set departure date and the date set in the camera's Clock. When destination is set in [WORLD TIME], days elapsed are calculated based on local destination time.
- The set travel date is saved even when the camera's power is turned off.
- When [TRAVEL DATE] is set to [OFF], the number of days elapsed is not recorded. It is not displayed even if [TRAVEL DATE] is set to [SET] after recording.
- If settings are made before departure date, number of days to departure are displayed in orange with a minus sign (but not recorded).
- When [TRAVEL DATE] is displayed in white with a minus sign, the [HOME] date is one day in advance of the [DESTINATION] date (this is recorded).
- To print the number of days that have passed, either use [TEXT STAMP] or print using the software on the supplied CD-ROM 'PHOTOfunSTUDIO'.

[LOCATION]

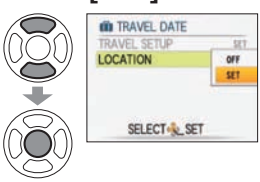
Record your destination.

TZ10 ZS7

Once the [TRAVEL SETUP] is set, you can set the destination.

1 Select [LOCATION] in step 2 on the previous page

2 Select [SET]



3 Enter your destination

- Entering text (→113)

4 Close the menu

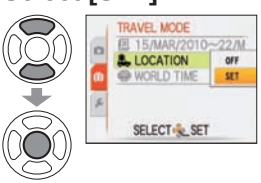


TZ8 ZS5

Once the [TRAVEL DATE] is set, you can set the destination.

1 Select [LOCATION] from the [TRAVEL MODE] menu (→20)

2 Select [SET]



3 Enter your destination

- Entering text (→113)

4 Close the menu



- The destination you set is displayed on the [TRAVEL MODE] menu screen.

■To clear

In step 2, select [OFF] and press [MENU/SET]

- If [TRAVEL SETUP] is recorded, [LOCATION] is recorded at the same time. TZ10 ZS7
- If [TRAVEL DATE] is recorded, [LOCATION] is recorded at the same time. TZ8 ZS5
- It is recorded separately from the place name information recorded for pictures by the [GPS SETTING]. TZ10 ZS7
- [LOCATION] cannot be recorded on motion pictures recorded in [AVCHD Lite]. TZ10 ZS7
- To print the destination, either use [TEXT STAMP] or print using the software on the supplied CD-ROM 'PHOTOfunSTUDIO'.

* Recording only. (Cannot set.)

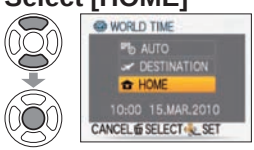
[WORLD TIME]

Set the recording date and time with the local time at your destination. Perform [CLOCK SET] in advance.

1 Select [WORLD TIME] from the [TRAVEL MODE] menu (→20)

- [PLEASE SET THE HOME AREA] will be displayed when setting for the first time. In this case, press [MENU/SET] and skip to step 3.

2 Select [HOME]

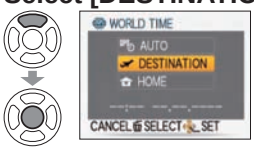


3 Set your home area

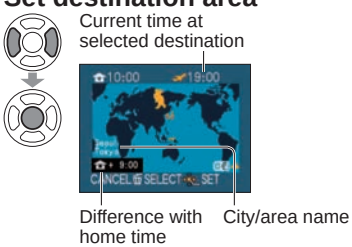


- When [HOME] is changed after it has already been set, the display returns to the [TRAVEL MODE] menu. To continue and set [DESTINATION], press ►.

4 Select [DESTINATION]



5 Set destination area



6 Close the menu

■To set summer time

Do this in Step 3 or 5  (Press again to release)

- When summer time is set in [DESTINATION], the current time is advanced by 1 hour. If the setting is cancelled, the time automatically returns to the current time. Even if you set summer time in [HOME], current time will not be changed. Please advance the current time by 1 hour in [CLOCK SET].

Recording Mode: iA* P A S M MS SCN 4K* TZ8 ZS5

* Recording only. (Cannot set.)

■Using GPS to make automatic settings TZ10 ZS7

Following step 2 of the previous page, you can select [AUTO] to use the GPS function to set the local time for your destination automatically.
This is the same function as [AUTO CLOCK SET]. For details (→89)

- When you have returned from your destination, follow steps 1 and 2 and set [HOME].
- If [HOME] is already set, change only [DESTINATION] before using.
- If you cannot find your destination in the area displayed on the screen, set based on difference with home time.
- ✈ is displayed on the screen for pictures recorded at the destination when they are played back.

Using the [REC] menu

- **For [REC] menu setting procedures (→20)**
- ‘Quick menu’ (→112) is useful to easily call up frequently-used menus.

[PICTURE SIZE]

Set size of picture. Number of pictures which can be recorded depends on this setting and on [QUALITY] (→96).

■ **Recording Mode:** iA P A S M MS SCN

■ **Settings:**

Picture Size ([ASPECT RATIO]: 4:3)				
12 M	**8 M** EZ *1	**5 M** EZ	**3 M** EZ*1	**0.3 M** EZ
4000×3000	3264×2448	2560×1920	2048×1536	640×480

Picture Size ([ASPECT RATIO]: 3:2)				
11.5 M	**7.5 M** EZ*1	**4.5 M** EZ*1	**2.5 M** EZ*1	**0.3 M** EZ*1
4176×2784	3392×2264	2656×1768	2048×1360	640×424

Picture Size ([ASPECT RATIO]: 16:9)				
10.5 M	**7 M** EZ*1	**4.5 M** EZ*1	**2 M** EZ*1	**0.2 M** EZ*1
4320×2432	3552×2000	2784×1568	1920×1080	640×360

*1 This setting is not available in iA ([INTELLIGENT AUTO] Mode).

- Number of recordable pictures (→174, 176)
- Extra Optical Zoom can be used for picture sizes indicated with EZ.
- Extra Optical Zoom is not available during motion picture recording, when using [MACRO ZOOM], or in the Scene Modes [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], or [PHOTO FRAME].
- Mosaic effect may appear depending on subject and recording conditions.

Setting guide

Larger picture size ⟷	Smaller picture size*2
Crisper picture	Coarser picture
Lower recording capacity	Higher recording capacity

*2 For example, ‘0.3 M EZ’ is suitable for e-mail attachments or longer recording.

[REC QUALITY] TZ8 ZS5

■ **Recording Mode:**

For details (→77)

[QUALITY]

Set quality of picture.

■ **Recording Mode:** P A S M MS SCN

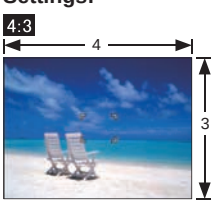
■ **Settings:** Fine (High quality, priority to picture quality)
Standard (Standard quality, priority to the number of pictures)

[ASPECT RATIO]

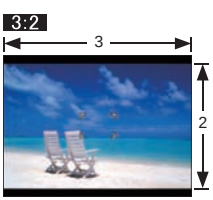
Aspect ratio of still picture can be changed according to printing or playback format.

■ **Recording Mode:** P A S M MS SCN

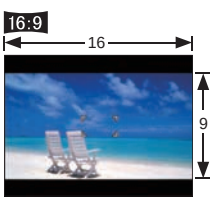
■ **Settings:**



Same as 4:3 TV or computer



Same as normal film camera



For playback on widescreen/ high definition TV

- Edges may be cut off when printing – be sure to check in advance.
- In iA ([INTELLIGENT AUTO] Mode), 3:2 (11.5M) and 16:9 (10.5M) may be selected by changing the [PICTURE SIZE].

ISO [INTELLIGENT ISO]

Camera automatically adjusts ISO Sensitivity and shutter speed according to movement of subject to avoid blur. Higher ISO Sensitivity reduces subject blur and jitter but can increase interference. Please select maximum ISO Sensitivity according to table below.

■ **Recording Mode:** P A

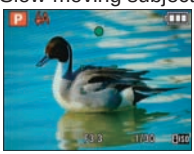
■ **Settings: [OFF] /** ISO MAX 400 **/** ISO MAX 800 **/** ISO MAX 1600

Setting guide

Movement of subject	Slow ⟷	Fast
ISO Sensitivity	Low	High
Shutter speed	Slow	Fast
Interference	Low	High

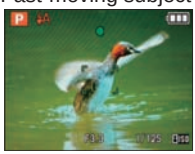
For [REC] menu setting procedures (→20)

● Slow-moving subject



ISO Sensitivity 200
(Shutter speed 1/30)

● Fast-moving subject



ISO Sensitivity 800
(Shutter speed 1/125)

- Shutter speed and ISO Sensitivity are displayed in the screen for a few seconds after recording.
- If interference becomes noticeable, we recommend reducing the setting, or setting [NOISE REDUCTION] in [PICT.ADJ.] in the + direction.
- Blurring may occur depending on brightness, size, position, and speed of movement of the subject (e.g. if subject is too small, is on edge of picture, or starts moving as soon as shutter button is pressed).
- Scope of flash recording (→48)

ISO [SENSITIVITY]

Set ISO Sensitivity (sensitivity to lighting) manually.
We recommend higher settings to take clear pictures in darker locations.

■ **Recording Mode: P A S M**

■ **Settings: [AUTO] / [80] / [100] / [200] / [400] / [800] / [1600]**

Setting guide

[SENSITIVITY]	[80] ⟷	[1600]
Location (recommended)	Bright (outdoors)	Dark
Shutter speed	Slow	Fast
Interference	Low	High

- [AUTO] is automatically set in a range up to 400 (1000 when flash is used) based on subject movement and brightness.
- Scope of flash recording (→48)
- Cannot be set when [INTELLIGENT ISO] is used (iISO is displayed)
- If interference becomes noticeable, we recommend reducing the setting, or setting [NOISE REDUCTION] in [PICT.ADJ.] in the + direction.

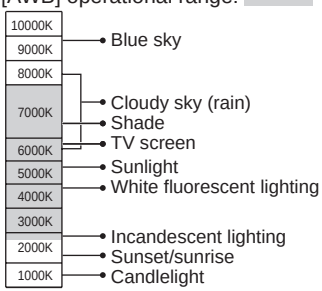
WB [WHITE BALANCE]

Adjust colouring to suit light source if colours otherwise appear unnatural.

■ **Recording Mode:** TZ10 ZS7 P A S M MS1 MS2 SCN
TZ8 ZS5 P A S M MS SCN

■ **Settings: [AWB] (automatic) / (outdoor, clear sky) / (outdoor, cloudy sky) / (outdoor, shade) / (Incandescent lighting) / (uses value set in SET) / SET (set manually)**

●[AWB] operational range:



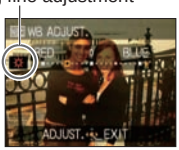
- Pictures may appear red or blue if out of range. This function may also not work correctly even within range if there are many light sources present.
- We recommend setting to [AWB] or [SET] when under fluorescent lighting.

■ **White Balance fine adjustment (excluding [AWB])**

White Balance settings can be individually fine tuned if colours still do not appear as anticipated.

①Press ▲ several times until [WB ADJUST.] is displayed.
②Adjust with ► if reds are strong, adjust with ◄ if blues are strong.
③Press [MENU/SET].

Changes to red (blue) when making fine adjustment



- Settings are remembered even if power is turned off.
- Settings remain applied when using flash.
- Even though the [AWB] setting is fixed in [UNDERWATER] Scene Mode, fine adjustments may still be made.
- Fine adjustments cannot be made when [COLOR EFFECT] (→104) is set to [B/W], [SEPIA], [COOL], or [WARM].

■ **Setting White Balance manually (SET)**

①Select SET and press [MENU/SET].
②Point the camera towards a white object (e.g. paper) and press [MENU/SET].
③Press [MENU/SET].
White Balance is set to .

Only takes pictures of white objects within frame (step ②)





- Making this setting will reset White Balance fine adjustment.
- Even if the camera's power is OFF, the set White Balance is remembered.
- It may not be possible to set the correct White Balance if subjects are too bright or too dark. In this case, adjust the brightness and try to set the White Balance again.

For [REC] menu setting procedures (→20)

[FACE RECOG.]

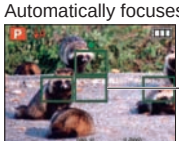
Registering people that appear frequently in your pictures allows them to be given priority when aligning focus, and allows all pictures featuring them to be viewed collectively.
For details (→78).

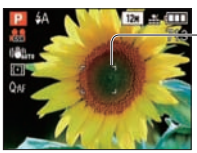
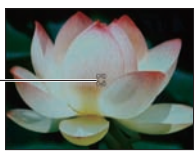
[AF MODE]

Method of aligning focus can be changed according to position and number of subjects.

■ **Recording Mode:** P A S M MS SCN

■ **Settings:** / / / / /

Taking front-on pictures of people **(Face Detection)**	Recognises faces (up to 15 people) and adjusts exposure and focus accordingly. When [METERING MODE] (→101) is set to 'Multiple'.  AF area Yellow : When the shutter button is pressed halfway, the frame turns green when the camera is focused. White : Displayed when more than one face is detected. Other faces that are the same distance away as faces within the yellow AF area are also focused. • If the [REC] menu's [FACE RECOG.] is set to [ON], (Face Detection) will be set, and focus and exposure will prioritize persons whose pictures are often recorded. (→78)
Automatically locking the focus on a moving subject **(AF Tracking)**	Align the AF Tracking frame with the subject, and then press ▼.  AF Tracking frame When the subject is recognised, the AF Tracking frame changes from white to yellow, and the subject is automatically kept in focus. If AF Lock fails, a red frame flashes. • To clear AF Lock, press ▼. • Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞)
Subject not centred in picture (AF area not displayed until focused) **(11-area-focusing)**	Automatically focuses on any of 11 points.  AF area

Determined position for focus	1-area-focusing (High speed)/ 1-area-focusing: Focuses on AF area in centre of picture. (Recommended when focus is difficult to align)	Spot-focusing: Focuses on smaller, limited area.
[H] (1-area-focusing (High speed: Focuses faster than other settings)) **[] (1-area-focusing)** **[•] (Spot-focusing)**		

- When using [H], picture may freeze momentarily before focus is aligned.
- AF area becomes larger in dark locations or when using Digital Zoom or Macro Zoom, etc.
- Use [H] or [] if focus is difficult to align with [•].
- Cannot set to 'Face Detection' in the following cases:
 [PANORAMA ASSIST], [NIGHT SCENERY], [FOOD], [STARRY SKY], [FIREWORKS], [AERIAL PHOTO], [UNDERWATER] Scene Modes
- If the camera misinterprets a non-human subject as a face in the 'Face Detection' setting, switch to another setting.
- The Face Detection function may fail to work under the following conditions. (AF mode setting is switched to [])
 - When the face is not facing the camera or the face is at an angle
 - When the facial features are hidden behind sunglasses, etc.
 - When there is little shadow on the face
 - When the face is extremely bright or dark
 - When the face appears small on the screen
 - When there is rapid movement
 - When the camera is shaking
 - When the subject is other than a human being such as pets
 - When Digital Zoom is used
- In AF Tracking, the AF lock can fail, lose the subject, or track another subject or following conditions.
 - The subject is too small
 - There is rapid movement
 - The camera is shaking
 - The location is too bright or dark
 - A similarly-coloured subject or background
 - Zoom is used
- When AF Tracking does not work, focus will be on ([] 1-area-focusing)
- Cannot set to [] in the following cases.
 - [PANORAMA ASSIST], [STARRY SKY], [FIREWORKS], [PIN HOLE], [FILM GRAIN], or [HIGH DYNAMIC] Scene Modes.
 - [B/W], [SEPIA], [COOL], and [WARM] in [COLOR EFFECT]
- While recording motion pictures and the setting is other than (Face Detection), focus will be on ([] 1-area-focusing).

For [REC] menu setting procedures (→20)

[PRE AF]

Focus is continually aligned according to movement of subject even when shutter button is not pressed. (Increases battery consumption)

■ **Recording Mode:** P A S M MS SCN

■ **Settings:**

Setting	Effect
[OFF]	Focus is not adjusted until the shutter button is pressed halfway.
[Q-AF] (Quick AF)	The focus is automatically adjusted when camera blurring is small even when the shutter button is not pressed.
[C-AF] (Continuous AF)	The focus is adjusted continuously based on subject movement, even when the shutter button is not pressed.

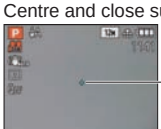
- Focus alignment may take time if zoom is suddenly changed from max. W to max. T, or if suddenly moving closer to subject.
- Press shutter button halfway if focus is difficult to align.
- The function will turn [OFF] in the following cases.
 In Scene Modes [NIGHT PORTRAIT], [NIGHT SCENERY], [STARRY SKY] or [FIREWORKS]
- [Q-AF] will not work while AF Tracking is operating.

[METERING MODE]

You can change the position for measuring brightness when correcting exposure.

■ **Recording Mode:** P A S M

■ **Settings:**

	Brightness measurement position	Conditions
Multiple	Whole screen	Normal usage (produces balanced pictures)
Centre weighted	Centre and surrounding area	Subject in centre
Spot	Centre and close surrounding area  Spot metering target	Great difference between brightness of subject and background (e.g. person in spotlight on stage, backlighting)

i◑ [I.EXPOSURE]

Automatically adjusts contrast and exposure to give more lifelike colours when there is significant contrast between background and subject.

■ **Recording Mode:** TZ10 ZS7 P A S M
TZ8 ZS5 P A S M 🎞

■ **Settings: [OFF]/[LOW]/[STANDARD]/[HIGH]**

- [LOW], [STANDARD] and [HIGH] indicate the amount of correction.
- If the setting is other than [OFF], i◑ is displayed on the screen.
- When [I.EXPOSURE] works, the colour of i◑ changes.
- Even if [SENSITIVITY] is set to [80] or [100], when [I.EXPOSURE] is activated, pictures may be taken at a higher sensitivity than the setting.
- Correction effects may not be achieved under certain conditions.

MIN [MIN. SHTR SPEED]

Sets shutter speed to minimum. We recommend using slower shutter speeds to take brighter pictures in dark locations.

■ **Recording Mode:** P

■ **Settings: [AUTO] [1/250] [1/125] [1/60] [1/30] [1/15] [1/8] [1/4] [1/2] [1]**

- Slower shutter speeds allow for brighter pictures but increase risk of jitter, so we recommend using a tripod and the self-timer.
- As still pictures may become dark when using faster values such as [1/250], we recommend that still pictures are taken in bright locations (MIN flashes red when shutter button is half-pressed if still picture will be dark).
- MIN displayed on screen for settings other than [AUTO].

For [REC] menu setting procedures (→20)

[BURST]

Enables a rapid succession of still pictures to be taken. Succession of still pictures taken while shutter button is held down.

■ **Recording Mode:** iA P A S M MS SCN

■ **Settings:**

[BURST] setting	Speed	No. of pictures*
[OFF]	No burst	
(Burst)	2.3 pictures/sec.	Fine: Max. 3 Standard: Max. 5

* When using self-timer: Fixed at 3 pictures

- Focus, exposure and White Balance are fixed in the first picture.
- Burst speed may be reduced if [SENSITIVITY] is set to high, or if shutter speed is reduced in darker locations.
- When burst setting is used, flash is set to [FORCED FLASH OFF], and [AUTO BRACKET], [MULTI ASPECT], and [AUDIO REC.] settings are cancelled.
- When burst is performed with the built-in memory, writing will take some time.
- Settings will be stored even if power is turned off.
- Auto Review performed regardless of [AUTO REVIEW] setting.
- Burst is not available in the Scene Modes [TRANSFORM], [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [PIN HOLE], [FILM GRAIN], [HIGH DYNAMIC],and [PHOTO FRAME].
- Using the [HI-SPEED BURST] Scene Mode allows a faster succession of still pictures to be taken. [FLASH BURST] is convenient to take continuous still pictures using flash in dark places.

i.R [I.RESOLUTION]

Super resolution technology can be used to record still pictures with sharper outlines and clearer resolution. Also, when [i.ZOOM] is set, the zoom ratio can be increased to about 1.3 with almost no deterioration of picture quality.

■ **Recording Mode:** P A S M

■ **Settings: [OFF]/[ON]/[i.ZOOM]**

- About i.ZOOM (→41)
- The setting is fixed to [i.ZOOM] in iA ([INTELLIGENT AUTO] Mode) and ([CLIPBOARD] Mode).
- The setting is fixed to [ON] in [HIGH SENS.] and [HI-SPEED BURST] Scene Modes, [OFF] in [FLASH BURST] and [PIN HOLE] Scene Modes, and [i.ZOOM] in other Scene Modes.

[DIGITAL ZOOM]

Multiplies effect of Optical Zoom or Extra Optical Zoom by up to 4 times. For details (→43)

■ **Recording Mode:** P A S M MS SCN

■ **Settings: [OFF]/[ON]**

● This is fixed to [ON] when [MACRO ZOOM] is set.

C-AF [CONTINUOUS AF] TZ8 ZS5

Either allow the focus to be constantly adjusted during motion picture recording, or fix the focus position at the start of recording.

■ **Recording Mode:** 🎞

■ **Settings:** **[ON]** : Adjust focus according to movement of subject during motion picture recording. (C-AF appears on the screen.)
[OFF] : Fix focus position at the start of motion picture recording. Use this setting to keep the same focus position for subjects with little forward/backward movement.

● The setting is fixed to [OFF] in [STARRY SKY] and [FIREWORKS] Scene Modes.

[COLOR EFFECT]

Set colour effects.

■ **Recording Mode:** TZ10 ZS7 iA P A S M
TZ8 ZS5 iA P A S M 🎞

■ **Settings: [STANDARD]/[B/W]/[SEPIA]/[COOL]** (more blue)**/[WARM]** (more red)**/** [Happy] (iA only)

● In iA ([INTELLIGENT AUTO]), only [STANDARD], [Happy], [B/W] or [SEPIA] can be set (these are set separately from other modes).

For [REC] menu setting procedures (→20)

[PICT.ADJ.]

The elements that determine picture quality are set for each item and the pictures you record are adjusted to your preferred picture quality.

■ **Recording Mode:** P A S M

■ **Settings:**

Settings content	Settings and effect	–	+
[CONTRAST]	The difference in brightness and darkness in pictures	Smaller	Greater
[SHARPNESS]	Outlines in pictures	Soft	Sharp
[SATURATION]	Change of colour saturation	Subdued	Vivid
[NOISE REDUCTION]	Noise processing	Prioritize resolution	Reduce noise

- If you are concerned about noise when you record a dark scene, it is recommended to move [NOISE REDUCTION] to the plus side, or to adjust items other than [NOISE REDUCTION] to the minus side before recording.

[STABILIZER]

Automatically detects and prevents jitter.

■ **Recording Mode:** P A S M MS SCN

■ **Settings:**

Settings	Effect
[OFF]	Pictures deliberately taken with no jitter correction
[AUTO]	The optimum image stabilizer is performed automatically based on the recording conditions.
[MODE 1]	Constant correction (Monitor image stable, composition easy to determine)
[MODE 2]	Correction when shutter button is pressed (More effective than [MODE 1])

- Setting fixed to [MODE 2] in [SELF PORTRAIT] and [OFF] in [STARRY SKY] Scene Modes.
- Cases where Optical Image Stabilizer may be ineffective:
 Heavy jitter, high zoom ratio (including Digital Zoom range), fast-moving objects, indoors or in dark locations (due to low shutter speed)
- This is fixed at [MODE 1] during motion picture recording.

[AUDIO REC.]

Sounds can also be recorded with pictures. This is useful for conversation or memo recording.

■ **Recording Mode:** P A S M MS SCN

■ **Settings: [OFF]/[ON]** (Record approx. 5 seconds of sound (displayed on screen))

- To cancel recording → Press [MENU/SET].
- To play audio (→115)
- Recording is not possible in [BURST], [AUTO BRACKET], [MULTI ASPECT], and the [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], and [STARRY SKY] Scene Modes.
- [TEXT STAMP], [RESIZE], [CROPPING], [LEVELING], and [ASPECT CONV.] cannot be used with still pictures with audio.
- Separate setting to [AUDIO REC.] in [CLIPBOARD] menu (→111).
- **Do not block microphone (→9, 10) with fingers.**

AF✳ [AF ASSIST LAMP]

Illuminates lamp when dark to facilitate focus alignment.

■ **Recording Mode:** P A S M MS SCN

■ **Settings:** **[OFF]:** Lamp off (taking pictures of animals in dark, etc.)
[ON] : Lamp illuminated with halfway press of shutter button (AF✳ and larger AF area displayed)

- When [CONTINUOUS AF] is set to [OFF], the AF Assist Lamp illuminates even when the motion picture button is pressed.



Lamp: Effective distance: 1.5 m (4.92 feet)
(Do not cover or look at lamp from close range)

[RED-EYE REMOVAL]

Automatically detects red-eye and corrects still picture data when recording with flash red-eye reduction ().

■ **Recording Mode:** P A S M MS SCN

■ **Settings: [OFF]/[ON]**

- Disabled when [AF MODE] is other than (Face Detection).
- Depending on the circumstances, it may not be possible to correct red eye.
- When the function setting is [ON], a appears with the flash icon. (→47)

For [REC] menu setting procedures (→20)

[CLOCK SET]

Set the Clock. Same function as that in [SETUP] menu (→22).

Using the [MOTION PICTURE] menu

- **For [MOTION PICTURE] menu setting procedures (→20)**
- ‘Quick menu’ (→112) is useful to easily call up frequently-used menus.

[REC MODE]

Sets the data format of the motion picture that is recorded.

■ **Recording Mode:** iA P A S M MS1 MS2 SCN

■ **Settings:**

Recording format	Effect
[AVCHD Lite(GPS REC)]*	These are AVCHD Lite motion pictures to which location name information from the start of recording has been added.
[AVCHD Lite]*	This is a data format suitable for playback on high-definition TVs.
[MOTION JPEG]	This is a data format suitable for playback on computers that allows even small picture sizes to be recorded. Location name information from the start of recording can also be recorded.

* When the term “AVCHD Lite motion picture” is used in this manual, it means a motion picture recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite].

- The [REC QUALITY] options vary based on the setting.
- If a card is not loaded in the camera, the motion picture is automatically recorded in [MOTION JPEG] ([REC QUALITY]: [QVGA]).
- Even when devices are compatible with motion pictures recorded with this camera, the playback may have poor picture or sound quality, or playback may not be possible. Also, the recording information may not be displayed properly. In this case, use this unit.
 For details on AVCHD compatible devices, refer to the support sites below.
 http://panasonic.jp/support/global/cs/dsc/
 (This Site is English only.)
- AVCHD Lite motion pictures cannot be played back on devices not compatible with AVCHD (such as conventional DVD recorders). Also, motion pictures recorded in [AVCHD Lite(GPS REC)] cannot be played back with Panasonic digital cameras (LUMIX) compatible with AVCHD (Lite) recording that were sold in or before 2009.
- If positioning fails and location name information is not saved, the location name information is not recorded.
- Because AVCHD Lite motion pictures do not conform to DCF and Exif, some information (such as picture number, White Balance, etc.) is not displayed during playback.
- Using a card of SD speed ‘Class 4’* or above is recommended for recording motion pictures in [AVCHD Lite(GPS REC)]/[AVCHD Lite].
 Using a card of SD speed ‘Class 6’* or above is recommended for recording motion pictures in ‘MOTION JPEG’.
 * The SD speed class is a speed rating for continuous writing.
- To play back AVCHD Lite motion pictures using a computer, please use the ‘PHOTOfunSTUDIO’ software on the CD-ROM supplied.

[REC QUALITY]

Sets the picture quality of the motion picture that is recorded.

■ **Recording Mode:** iA P A S M MS1 MS2 SCN

For [MOTION PICTURE] menu setting procedures (→20)

■ **Settings:**

[AVCHD Lite(GPS REC)] in [REC MODE]

Setting	Resolution	Bit rate*1	Aspect ratio
[GSH]	1280 x 720	17 Mbps	16:9
[GH]	1280 x 720	13 Mbps	
[GL]	1280 x 720	9 Mbps	

[AVCHD Lite] in [REC MODE]

Setting	Resolution	Bit rate*1	Aspect ratio
[SH]	1280 x 720	17 Mbps	16:9
[H]	1280 x 720	13 Mbps	
[L]	1280 x 720	9 Mbps	

[MOTION JPEG] in [REC MODE]

Setting	Resolution	Frame rate*2	Aspect ratio
[HD]	1280 x 720	30 fps	16:9
[WVGA]	848 x 480	30 fps	
[VGA]	640 x 480	30 fps	4:3
[QVGA]	320 x 240	30 fps	

*1 The bit rate is the amount of data per unit time. A higher value translates into a higher image quality. This camera uses the VBR (Variable Bit Rate) recording system and the available recording time is shorter when recording a subject with rapid movements.

*2 The frame rate is the number of frames per second.

- [WVGA] cannot be set in [INTELLIGENT AUTO] Mode.
- [QVGA] only can be recorded to the built-in memory.

C-AF [CONTINUOUS AF]

Either allow the focus to be constantly adjusted during motion picture recording, or fix the focus position at the start of recording.

■ **Recording Mode:** P A S M MS1 MS2 SCN

■ **Settings:** **[ON]** : Adjust focus according to movement of subject during motion picture recording. (C-AF appears on the screen.)

[OFF] : Fix focus position at the start of motion picture recording. Use this setting to keep the same focus position for subjects with little forward/backward movement.

- The setting is fixed to [OFF] in [STARRY SKY] and [FIREWORKS] Scene Modes.

[WIND CUT]

Reduces recording of wind sounds (wind noise) when recording in a strong wind

■ **Recording Mode:** P A S M MS1 MS2 SCN

■ **Settings: [OFF]/[ON] (appears on the screen.)**

- When [WIND CUT] is set to [ON], lower sounds will be eliminated and the sound quality will differ from that of normal recordings.

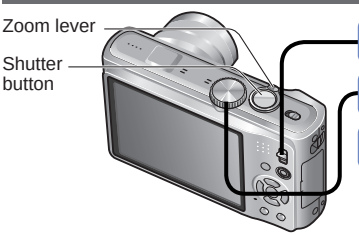
Taking/viewing clipboard pictures

[CLIPBOARD] Mode

Mode:

Useful for taking pictures of timetables and maps instead of taking memos.
Regardless of presence of card, pictures will always be saved to the clipboard folder of the built-in memory, so that they can be distinguished from normal pictures and viewed immediately. **Beware of copyrights, etc. (→6)**

Taking clipboard pictures



1 Set to

2 Set to

3 Take a clipboard picture



Press halfway (press lightly to focus)

Press fully (press the button all the way to record)

- Represents built-in memory used entirely for clipboard pictures (approx.)

Picture Size	2 M	1 M
Pictures TZ10 ZS7	26	40
Pictures TZ8 ZS5	81	120

Viewing clipboard pictures

1 Set REC/PLAY switch to

2 Set mode dial to

- Can be viewed with same operations as with pictures taken in other modes (→44). (30-picture and calendar displays cannot be used.)

■ **To delete clipboard pictures** Press in step 2 above. (→45)

■ **If built-in memory is full**

Non-clipboard pictures can be deleted from the built-in memory by removing the card from the camera, setting the mode dial to a setting other than ([CLIPBOARD] Mode), and pressing .

- Copy clipboard pictures onto memory cards in order to print (→111).
- Motion pictures cannot be recorded in [CLIPBOARD] Mode. TZ10 ZS7
- Playback Mode functions cannot be used.
- [STABILIZER] setting made in [REC] menu will be reflected in Clipboard Mode.
- Functions unavailable:
 [INTELLIGENT ISO], [FACE RECOG.], [PRE AF], [I.EXPOSURE], [MIN. SHTR SPEED], [BURST], [DIGITAL ZOOM], [COLOR EFFECT], [PICT.ADJ.], [AUTO BRACKET], [MULTI ASPECT], [WB ADJUST.], [LCD POWER SAVE], [HISTOGRAM]
- The settings for the following functions are fixed:
 - [QUALITY]: (Standard)
 - [WHITE BALANCE]: [AWB]
 - [AF ASSIST LAMP]: [ON]
 - [METERING MODE]: (Multiple)
 - [ASPECT RATIO]: 4:3
 - [AF MODE]: (1-area-focusing)
 - [GUIDE LINE]:
 - [SENSITIVITY]: [AUTO]
 - [SLEEP MODE]: [5 MIN.]
 - [I.RESOLUTION]: [i.ZOOM]

Zoom Mark

Useful for enlarging and saving parts of maps, etc.

■ To register zoom enlarged size and position

① Enlarge with zoom lever and select position with ▲▼◄►

② Press



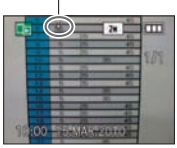


- To change zoom and position: Perform steps ① and ②
- To finish Zoom Mark setting: Restore zoom to original (1 x) ratio

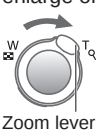
[+] Zoom Mark
Displayed on registered pictures

■ To view registered ratio and position:

① Display picture with [+]



② Turn to T side (No need to manually enlarge or move)



Zoom lever

Immediately displayed at registered ratio and position



- To cancel Zoom Mark → [CANCEL MARK] (below)

- When a picture with a Zoom Mark is deleted, both the original picture and picture with Zoom Mark will be deleted.
- Picture can be deleted even while zoomed in.

[CLIPBOARD] menu

A special menu is used in [CLIPBOARD] Mode.

[REC ON CLIPBOARD] menu (REC/PLAY switch: 📷 Mode dial: ✎)

[PICTURE SIZE]	[2 M] EZ (Priority to picture quality) / [1 M] EZ (Priority to the number of pictures)
[AUDIO REC.]	Record sound (5 seconds) simultaneously. [OFF] / [ON]
[LCD MODE]	[OFF] / [AUTO POWER LCD] / [POWER LCD] (→23)
[CLOCK SET]	(→22)

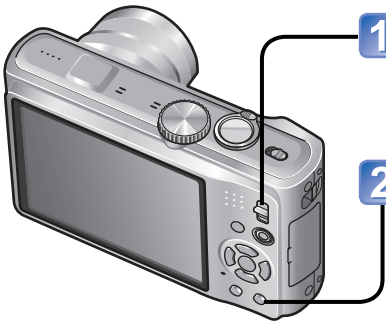
[PLAY ON CLIPBOARD] menu (REC/PLAY switch: ▶ Mode dial: ✎)

[CANCEL MARK]	① Select [+] marked clipboard picture with ◄►. ② Cancel with [MENU/SET].
[COPY]	Copy single pictures from clipboard to card. (Zoom Mark will not be copied.) ① Select clipboard picture with ◄► and press [MENU/SET]. ② Select [YES] with ▲▼ and press [MENU/SET].
[LCD MODE]	[OFF] / [POWER LCD] (→23).

- Other items on the [SETUP] menu will reflect settings made in the [PROGRAM AE] Mode, etc.

Using Quick menu

Recording menu items can be called up easily.



1 Set to



2 Display Quick menu

Q.MENU



Press the button until the Quick menu is displayed



Quick menu

3 Select item and setting

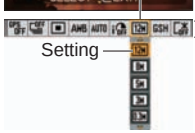


Select



Press (Finished)





■GPS function operations TZ10 ZS7

When [ON] or GPS is selected in the [GPS SETTING] item, the following operations are available:

- [GPS AREA SELECT] → Press [DISPLAY]

- For [REC] menu setting procedures (→20)
- Setting items displayed vary depending on Recording Mode.

Entering Text

Use the cursor buttons to enter names with the Face Recognition function and in Scene Modes [BABY] and [PET], or to register destinations in [TRAVEL DATE] etc.

1 (On the setting screen of each menu) Display the character selection screen





2 Select characters and press [MENU/SET] (repeat)





Cursor position

- Text is inserted at the cursor position.

■ To change the character type

①Press [DISPLAY]
(Changes each time you press the button)

[A] [a]: Upper/lower case alphabet
[&/1]: Symbols/numbers

3 When you are finished entering text, select [SET] and press [MENU/SET]





■ Editing text

①Press ▲▼◄► to move the cursor to text to edit.
- You can also use the zoom lever to reposition the cursor.

②Press ▲▼◄► to select [DELETE], and then press [MENU/SET].

③Press ▲▼◄► to select the correct text, and then press [MENU/SET].

- [A] [a] [&/1]: A maximum of 30 characters can be entered. (Maximum of 9 characters for [FACE RECOG.] names)
- The entry position cursor can be moved left and right with the zoom lever.
- Press 🗑 to return to the menu screen.
- Text is scrolled if it does not fit on the screen.
- To print the text you have specified, use [TEXT STAMP] (→128) or use the 'PHOTOfunSTUDIO' software on the CD-ROM (supplied).

Viewing as list (Multi Playback/Calendar Playback)

Playback Mode:

You can view 12 (or 30) pictures at once (Multi Playback), or view all pictures taken on a certain date (Calendar Playback).



1 Set to





- To view pictures: press ◄►

2 Set to multiple screen display



Scrolls with each turn to W side

Date recorded Picture no.

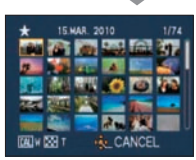


Total no.

Scroll bar

Picture type
- [FAVORITE] ★
- [AVCHD Lite] TZ10 ZS7
- [MOTION JPEG]
- [BABY]
- [PET]
- [TRAVEL DATE]
- [WORLD TIME]
- [TITLE EDIT]
- [TEXT STAMP]

(12 screens)



(30 screens)

Selected date (First picture from date)



- Select week with ▲▼ and date with ◄►, and press [MENU/SET] to display that date's pictures on a 12-screen display.

(Calendar screen)

■To restore

Turn to T side

■To change from 12/30-screen display to single-screen display

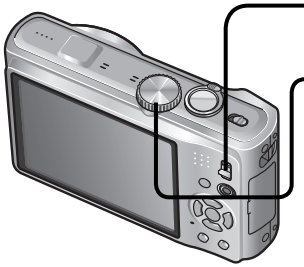
Select picture with ▲▼◄► and press [MENU/SET]

- Only months when pictures were taken are shown on the calendar screen. Pictures taken without Clock settings are displayed with the date 1st January, 2010.
- Cannot be displayed rotated.
- [ROTATE DISP.] cannot be performed in the 12-screen and 30-screen displays.
- Pictures taken with destination settings made in [WORLD TIME] are displayed in the calendar screen using the appropriate date for the destination's time zone.

Watching motion pictures/still pictures with audio

Playback Mode:

Motion pictures and still pictures with audio can be played back just as you view still pictures.

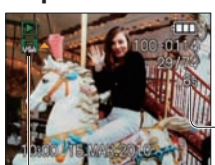


1 Set to

2 Set to a position other than

3 Select the picture and start playback





:[AVCHD Lite(GPS REC)]/ [AVCHD Lite] TZ10 ZS7

TZ10 ZS7, TZ8 ZS5 : [MOTION JPEG] (example shows the VGA icon)

:Still picture with audio

- The motion picture recording time display changes to the playback elapsed time when playback is started.
 Example: 1 hour 2 minutes and 30 seconds is 1h2m30s

■ Operations during motion picture playback



▲:Pause/play
▼:Stop
◄:Fast rewind (2 steps)
Single-frame rewind (while paused)
►:Fast forward (2 steps)
Single-frame forward (while paused)

- If ▲ is pressed during fast forward or rewind, it will return to normal playback speed.
- Volume can be adjusted with zoom lever (motion picture only).

■ Deleting

(→45)

- The volume for still pictures with audio can be adjusted by the speaker volume (→22).
- Motion pictures or still pictures with audio recorded on other devices may not be played correctly.
- When using a large-volume memory card, the rewind function may take some time.
- Some information (picture number, White Balance, etc.) will not be displayed for motion pictures recorded in [AVCHD Lite(GPS REC)] and [AVCHD Lite]. TZ10 ZS7
- Motion pictures recorded with [AVCHD Lite] can be viewed on your computer using ‘PHOTOfunSTUDIO’ on the supplied CD-ROM. TZ10 ZS7

Capturing still pictures from motion pictures

Playback Mode:

Save a scene from a motion picture as a still picture.

1 Display the picture that you want to capture as a still picture by pausing a motion picture during playback





▲: Pause/playback
◄: Fast rewind (2 steps)
(during pause) single-frame rewind
►: Fast forward (2 steps)
(during pause) single-frame forward

2 Capture still picture



3 Select [YES]





A still picture is created.

- The picture size is 2M 16:9. (Except for still pictures captured from motion pictures where the [REC QUALITY] is [VGA] or [QVGA], when the size is 0.3M 4:3.)
- The picture quality becomes slightly lower because of the picture quality setting of the original motion picture.
- It may not be possible to capture still pictures from motion pictures that were recorded with a different camera.

This function is not available in the DMC-TZ8/DMC-ZS5.

Splitting up motion pictures

Playback Mode:

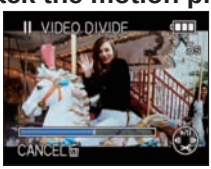
A single motion picture can be split into 2 parts. This is convenient when you want to keep just the necessary scenes, or if you wish to delete unnecessary scenes to increase free space on your card, such as when traveling.

1 Select [VIDEO DIVIDE] from [PLAYBACK] menu (→20)

2 Select the motion picture to split with ◄►, and then press [MENU/SET]

3 Play back the motion picture and pause at the place to split





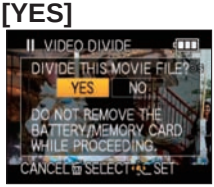
▲: Pause / playback
◄: Fast rewind (2 steps)
(during pause) single-frame rewind
►: Fast forward (2 steps)
(during pause) single-frame forward

4 Decide the point to split the motion picture



5 Select [YES]





The motion picture is split.
- **The original motion picture that was split does not remain.**
 (There will only be the 2 motion pictures that were created after the split.)
- Splitting may take some time.

- After setting, press 🗑 to return to the menu screen.

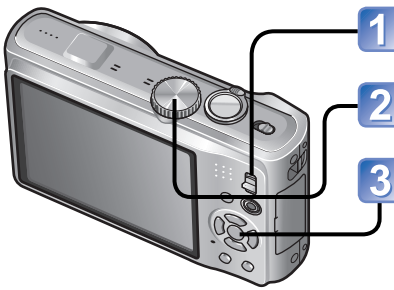
- Use a sufficiently charged battery (→11) or AC adaptor (optional) and DC coupler (optional).
- When there is extremely little free space left on the card, it may not be possible to split the motion picture.
- The following motion pictures cannot be split.
 - Motion pictures set as [FAVORITE]
 - Motion pictures protected by [PROTECT]
- Splits cannot be made that would leave a motion picture of less than 1 second after the split.
- Split points are set at time increments of 0.5 seconds. (There may be a slight difference from the specified point)
- During splitting, do not turn off the camera's power or remove the card or battery. If you do so, the motion picture will be deleted.
- It may not be possible to split motion pictures that were recorded with a different camera.
- [PRINT SET] is cancelled after splitting.

[VIDEO DIVIDE] is not available in the DMC-TZ8/DMC-ZS5.

Different playback methods [PLAYBACK MODE]

Playback Mode:

Recorded pictures can be played back in a variety of ways.



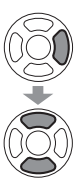
1 Set to

2 Set to a position other than

3 Display the screen for Playback Mode selection



4 Select the Playback Mode from MODE





■**[NORMAL PLAY]**
(→44)

■**[SLIDE SHOW]**
(→119)

■**[MODE PLAY]** TZ10 ZS7
(→120)

■**[GPS AREA PLAY]** TZ10 ZS7
(→121)

■**[TRAVEL PLAY]**
(→122)

■**[CATEGORY PLAY]**
(→124)

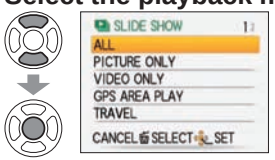
■**[FAVORITE PLAY]**
(→125)

- When no card is inserted, pictures (except [CLIPBOARD] pictures) are played back from the built-in memory.
- The [PLAYBACK MODE] automatically becomes [NORMAL PLAY] when the REC/PLAY switch is set to and the power is turned on, or when switching from Recording Mode to Playback Mode.
- [FAVORITE PLAY] is only displayed when pictures have been set as [FAVORITE] and the setting is [ON].

[SLIDE SHOW]

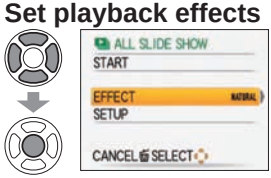
Automatically play pictures in order and to music. Recommended when viewing on TV screen.

1 Select the playback method



- **[ALL]** : Play all
- **[PICTURE ONLY]**: Plays back still pictures and still pictures with audio
- **[VIDEO ONLY]**: Playback of motion pictures only
- **[GPS AREA PLAY]** TZ10 ZS7:
 Selects place name or landmark to play back pictures recorded in the same place. (Use ▲▼◄► to select place name or landmark and press [MENU/SET]) (→121)
- **[TRAVEL]**: Play only pictures that were recorded with the [TRAVEL DATE] or [LOCATION] (→122)
- **[CATEGORY SELECTION]**:
 Select category and playback still pictures only. (Select category with ▲▼◄► and press [MENU/SET].) (→124)
- **[FAVORITE]**: Play pictures set as [FAVORITE] (displayed only when [FAVORITE] pictures have been set and setting is [ON]).

2 Set playback effects



[EFFECT] (Select music and effects according to picture atmosphere)	
[AUTO]	Camera selects optimum effect from [NATURAL], [SLOW], [SWING], and [URBAN] (only available with [CATEGORY SELECTION] setting)
[NATURAL]	Play with relaxed music and screen transition effects
[SLOW]	
[SWING]	Play with livelier music and screen transition effects
[URBAN]	
[OFF]*	No effects

* If [VIDEO ONLY] was selected in step 1, [EFFECT] is fixed at [OFF]. Also, the duration cannot be set.

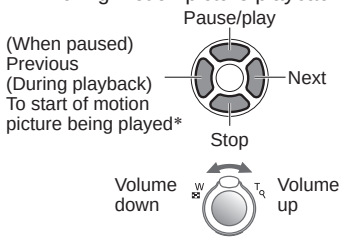
[SETUP]	
[DURATION]*	[1 SEC.] / [2 SEC.] / [3 SEC.] / [5 SEC.] (Only available when [EFFECT] is [OFF])
[REPEAT]	[OFF]/[ON] (Repeat)
[SOUND]	[OFF]: Music and audio will not play back. [AUTO]: With still pictures, music will play back, and with motion pictures or still pictures with audio, audio will play back. [MUSIC]: Music effect will play back. [AUDIO]: Audio is played back from motion pictures or still pictures with audio.

3 Select [START] with ▲ and press [MENU/SET]

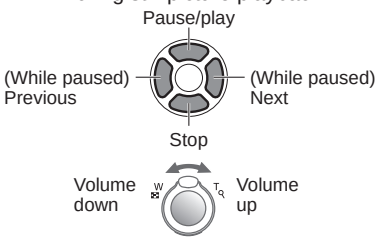
- Press 🗑 to return to the menu screen during Slide Show.

■Operations during Slide Show

During motion picture playback



During still picture playback



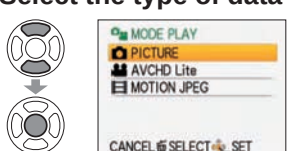
* The previous picture is displayed if less than 3 seconds of the motion picture has been played.

- When [URBAN] has been selected, the picture may appear in black and white as a screen effect.
- Certain playback effects cannot be used when displaying pictures on television using HDMI mini cables. TZ10 ZS7
- Music effects cannot be added.
- The duration setting is disabled during motion picture playback.
- Pictures with different aspect ratios have their edges cut so they can be displayed on the entire screen.

[MODE PLAY] TZ10 ZS7

This Playback Mode is useful for playing back still pictures only or only motion pictures recorded in [AVCHD Lite] (or [MOTION JPEG]).

1 Select the type of data



2 View pictures



• To delete the picture → Press 🗑.

- To exit [MODE PLAY], set to [NORMAL PLAY].
- Also select [AVCHD Lite] to play back motion pictures that were recorded in [AVCHD Lite(GPS REC)].

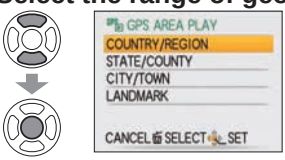
[MODE PLAY] is not available in the DMC-TZ8/DMC-ZS5.

For switching [PLAYBACK MODE] procedure (→118)

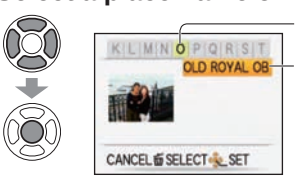
[GPS AREA PLAY] TZ10 ZS7

You can select the place name or landmark of the place where pictures were recorded to play them back.

1 Select the range of geographical region to play back



2 Select a place name or landmark displayed



First letter of place name or landmark displayed

Displayed recording place

3 View pictures



Previous Next

• To delete picture →Press 🗑 (delete).

- The calendar screen cannot be displayed.
- If there are many pictures, display may take some time.
- Only the following playback menu items can be used during [GPS AREA PLAY]: [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT]
- When closing [GPS AREA PLAY], set to [NORMAL PLAY]

[TRAVEL PLAY]

Play back only pictures recorded at your destination.

■Play back by travel date

Pictures can be played back by travel date if [TRAVEL SETUP] TZ10 ZS7/[TRAVEL DATE] TZ8 ZS5 was set at the time of their recording.

1 Select [TRAVEL DATE]





- If [ALL] is selected, all pictures for which [TRAVEL SETUP] TZ10 ZS7/[TRAVEL DATE] TZ8 ZS5 has been set are displayed.

2 Select the date to play back





▲▼: Select the week
◄►: Select the day

Pictures recorded on the selected date are displayed as a list.

- Months in which no pictures were recorded are not displayed.
- Dates that can be displayed are from January 2000 - December 2099.
- When there are multiple pictures recorded on the same date, the first picture recorded on that date is displayed on the calendar screen.
- If a [DESTINATION] has been set that has a different time zone, the recorded picture is displayed on the calendar with the local date and time.

3 Select the picture





The picture is displayed.

For switching [PLAYBACK MODE] procedure (→118)

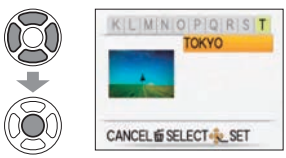
■Play back by destination

Pictures can be played back by destination if [LOCATION] was set at the time of their recording.

1 Select [LOCATION]



2 Select the item



- If there are many pictures, display may take some time.
- Of those pictures for which [LOCATION] has been set, the one with the lowest file number is displayed as the representative picture.

3 View pictures



Previous Next

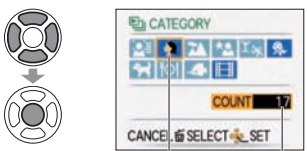
- To delete picture →Press 🗑 (delete).

- [CLIPBOARD] pictures are not displayed even if [TRAVEL MODE] is set.
- Only the following playback menu items can be used during [TRAVEL PLAY].
 [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT]

[CATEGORY PLAY]

Pictures can be classified automatically and viewed by category. Automatic classification starts when [CATEGORY PLAY] is selected from the Playback Mode selection menu.

1 Select the Category



Icons of categories with pictures (dark blue)

No. of pictures (appears after a few seconds)

- For (Playback by Person), use ▲▼◄► to select the person, and then press [MENU/SET].

2 View pictures



Previous Next

- To delete pictures → Press .

[CATEGORY]	Recording information such as Scene Modes
	Pictures taken using Face Recognition
	[PORTRAIT]/[i PORTRAIT]/ [SOFT SKIN]/ [TRANSFORM]/[SELF PORTRAIT]/ [NIGHT PORTRAIT]/ [i NIGHT PORTRAIT]/ [BABY]/[i BABY]
	[SCENERY]/[i SCENERY]/ [SUNSET]/[AERIAL PHOTO]/[i SUNSET]
	[NIGHT PORTRAIT]/ [i NIGHT PORTRAIT]/ [NIGHT SCENERY]/ [i NIGHT SCENERY]/ [STARRY SKY]
	[SPORTS]/[PARTY]/ [CANDLE LIGHT]/ [FIREWORKS]/[BEACH]/ [SNOW]/[AERIAL PHOTO]
	[BABY]/[i BABY]
	[PET]
	[FOOD]
	[UNDERWATER]
	[MOTION PICTURE]

- Calendar display cannot be used.
- Pictures taken without name settings in [FACE RECOG.] are not categorized.
- The following playback menus can only be set:
 [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT]
- To close [CATEGORY PLAY], select [NORMAL PLAY].

For switching [PLAYBACK MODE] procedure (→118)

★ [FAVORITE PLAY]

Manually play pictures set in [FAVORITE] (displayed only when [FAVORITE] pictures are present and setting is [ON]).

1 View pictures



Previous Next

- Calendar display cannot be used.
- The following playback menus can only be set:
 [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT]
- To close [FAVORITE PLAY], select [NORMAL PLAY].

Using the [PLAYBACK] menu

Playback Mode: ▶ (Set mode dial to any except 📷)

You can edit or protect recorded pictures.
- Depending on the Playback Mode, some [PLAYBACK] menu items are not displayed.
- New pictures are created after editing pictures with tools such as [TEXT STAMP] and [RESIZE]. Before starting to edit, make sure that there is enough free space in the built-in memory or memory card.

CAL [CALENDAR]

Select the date from the calendar screen to view only the pictures taken on that day (→114).

Set-up: Press [MENU/SET]→ ▶ [PLAYBACK] menu → Select [CALENDAR]

- This setting can only be made when the Playback Mode is [NORMAL PLAY].

[TITLE EDIT]

You can give titles, etc. to your favourite still pictures.

Set-up: Press [MENU/SET]→ ▶ [PLAYBACK] menu → Select [TITLE EDIT]

1 Press ▲▼ to select [SINGLE] or [MULTI], and then press [MENU/SET]

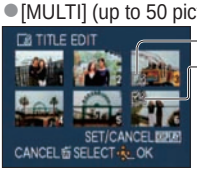
2 Select still picture

- [SINGLE]



DISPLAY

- [MULTI] (up to 50 pictures with the same text)



[TITLE EDIT] setting

[TITLE EDIT] already set

- To cancel → Press [DISPLAY] again.
- To execute → Press [MENU/SET].

3 Enter characters (Entering text (→113))

(After confirmation, press 🗑 to return to the menu screen in [SINGLE] setting.)

■ To edit

Select [SINGLE] in step 1 → select still picture with ◄►, and press [MENU/SET]→ correct text and select [EXIT] → press 🗑 to return to the menu.

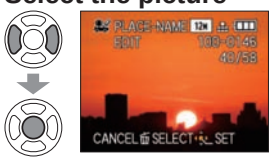
- Cannot be used with still pictures taken on other devices, protected still pictures, or motion pictures.
- To print text, use [TEXT STAMP] or the supplied CD-ROM 'PHOTOfunSTUDIO'.

For the [PLAYBACK] menu setting procedure (→20).

[PLACE-NAME EDIT] TZ10 ZS7

You can edit place name information recorded by GPS function.
Operation: Press [MENU/SET] on the playback screen and select → [PLAYBACK] menu → [PLACE-NAME EDIT]

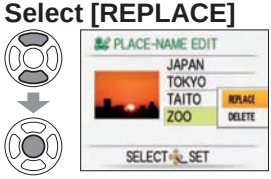
1 Select the picture



2 Select the location name or landmark name to edit.



3 Select [REPLACE]



4 Enter characters (Entering text (→113))

5 Select [YES]



6 If you want to edit another location name or landmark name, repeat steps 2 to 5

- After setting, press 🗑 to return to the menu screen.

■ **To delete a location name or landmark name**
In step 3, select [DELETE] with ▼, and then select [YES].

[VIDEO DIVIDE]

Motion pictures can be split to delete unnecessary scenes.
For details (→117)

Using the [PLAYBACK] menu (Continued)

Playback Mode: ▶ (Set mode dial to any except 📷)

[TEXT STAMP]

The recording date and time, location name information and the text registered in the [BABY], [PET] Scene Modes, [TRAVEL DATE] and [TITLE EDIT] are stamped on the still picture.

Set-up: Press [MENU/SET] → ▶ [PLAYBACK] menu → Select [TEXT STAMP]

1 Press ▲▼ to select [SINGLE] or [MULTI], and then press [MENU/SET]

2 Select still picture

● [SINGLE]



● [MULTI] (up to 50 pictures)



- To cancel → Press [DISPLAY] button again.
- To execute → Press [MENU/SET].

3 Select items and make settings for each



4 Select whether to stamp age



- If [NAME] is [OFF] in Step 3, this screen will not be displayed.

5 Select [YES]

(Screen varies according to picture size, etc.)



- When you have selected [SINGLE], after step 5, press 🗑 to return to the menu screen.
- Picture size will be reduced if greater than 3M. Picture will become slightly grainier.

Aspect ratio	After [TEXT STAMP]
4 : 3	3 M
3 : 2	2.5 M
16 : 9	2 M

For the [PLAYBACK] menu setting procedure (→20).

■Items that can be stamped

[SHOOTING DATE]	[W/O TIME]: Stamps recording date [WITH TIME]: Stamps recording date and time
[NAME]	: Stamp name registered in Face Recognition /: Stamp name registered in [BABY] or [PET]
[LOCATION]	Stamp Destination registered in [TRAVEL MODE]'s [LOCATION]
[TRAVEL DATE]	Stamp Travel Date set in [TRAVEL MODE]'s [TRAVEL DATE]
[TITLE]	Stamp text registered in [TITLE EDIT]
[COUNTRY]	Stamps place name information recorded by GPS function TZ10 ZS7 • If text such as the location name or landmark name is long, it may not be possible to stamp all the text.
[STATE/COUNTY]	
[CITY/TOWN]	
[LANDMARK]	

• The item cannot be stamped when function is turned [OFF].

■To check stamped text

'Playback Zoom' (→44)

- Cannot be used with still pictures taken on other devices, still pictures taken without setting Clock, motion pictures, or still pictures with audio.
- After [TEXT STAMP] is applied, pictures cannot be resized or cropped, and [LEVELING], [ASPECT CONV.], [TEXT STAMP] and date printing settings cannot be changed on pictures.
- Characters may be cut off on certain printers.
- Text is difficult to read when stamped on pictures of 0.3M or less.
- **Do not request date printing in store or make date printing on printer for still pictures with date stamps. (Date printing may be overlapping.)**

Using the [PLAYBACK] menu (Continued)

Playback Mode: ▶ (Set mode dial to any except 🎨)

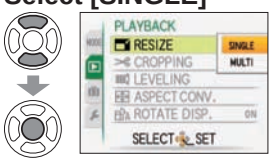
[RESIZE]

Picture size can be reduced to facilitate e-mail attachment and use in web pages, etc.
(Still pictures recorded at the smallest recording pixel level cannot be further reduced.)

Set-up: Press [MENU/SET]→ ▶ [PLAYBACK] menu → Select [RESIZE]

■[SINGLE]

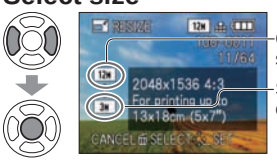
1 Select [SINGLE]



2 Select still picture



3 Select size



Current size

Size after change

4 Select [YES]

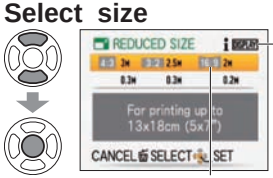


• After confirmation, press 🗑 to return to the menu screen.

■[MULTI]

1 Select [MULTI] in step 1 above

2 Select size



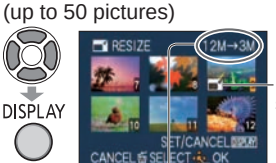
To see description of resize: Press the [DISPLAY] button

Select number of pixels after resizing

3 Select still picture

(up to 50 pictures)

DISPLAY



Resize setting

Number of pixels before/after resizing

• To cancel → Press [DISPLAY] button again.
• To execute → Press [MENU/SET].

4 Press ▲ to select [YES], and then press [MENU/SET]

- Picture quality is reduced after resizing.
- Cannot be used with motion pictures, still pictures with audio, or still pictures with text stamp. May not be compatible with still pictures taken on other devices.

For the [PLAYBACK] menu setting procedure (→20).

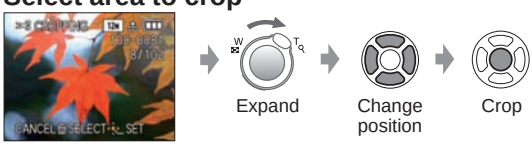
[CROPPING]

Enlarge your still pictures and crop unwanted areas.

Set-up: Press [MENU/SET]→ ▶ [PLAYBACK] menu → Select [CROPPING]

1 Press ◄► to select a still picture, and then press [MENU/SET]

2 Select area to crop



3 Press ▲ to select [YES], and then press [MENU/SET]

• After confirmation, press 🗑 to return to the menu screen.

- Picture quality is reduced after cropping.
- Cannot be used with motion pictures, still pictures with audio, or still pictures with text stamp. May not be compatible with still pictures taken on other devices.
- Original Face Recognition information will not be copied when still pictures are cropped.

[LEVELING]

Slight slanting in the still picture can be corrected.

Set-up: Press [MENU/SET]→ ▶ [PLAYBACK] menu → Select [LEVELING]

1 Press ◄► to select a still picture, and then press [MENU/SET]

2 Adjust the slant



3 Press ▲ to select [YES], and then press [MENU/SET]

• After confirmation, press 🗑 to return to the menu screen.

- Picture quality is reduced when leveling is performed.
- The resulting still picture may have fewer recording pixels than the original still picture when leveling is performed.
- May not be compatible with still pictures taken on other devices.
- Cannot be used with motion pictures, still pictures with audio, or still pictures with text stamp.
- Original Face Recognition information will not be copied when still pictures are leveled.

Using the [PLAYBACK] menu (Continued)

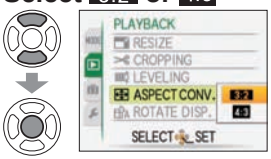
Playback Mode: ▶ (Set mode dial to any except 📷)

[ASPECT CONV.]

Convert still pictures taken in 16:9 to 3:2 or 4:3 for printing.

Set-up: Press [MENU/SET] → ▶ [PLAYBACK] menu → Select [ASPECT CONV.]

1 Select 3:2 or 4:3



2 Select still picture taken in 16:9



3 Select horizontal position and convert

(Move portrait pictures using ▲▼)



Changes to outlined size

4 Press ▲ to select [YES], and then press [MENU/SET]

- After confirmation, press 🗑 to return to the menu screen.

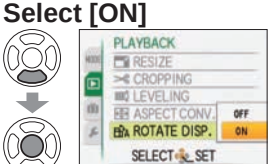
- Picture size may be increased after Aspect Ratio is changed.
- Cannot be used with motion pictures, still pictures with audio, still pictures with text stamp, or non-DCF files (→44). May not be compatible with still pictures taken on other devices.
- Original Face Recognition information will not be copied when Aspect Ratios are converted.

[ROTATE DISP.]

Automatically rotate portrait still pictures.

Set-up: Press [MENU/SET] → ▶ [PLAYBACK] menu → Select [ROTATE DISP.]

1 Select [ON]





[ON]



[OFF]

- [ROTATE DISP.] cannot be used with motion pictures.
- Some pictures taken facing up or facing down may not be rotated automatically. It may not be possible to rotate still pictures taken with certain other devices.
- Pictures cannot be rotated during Multi Playback.
- Will only be displayed rotated on computer if in Exif-compatible (→44) environment (OS, software).

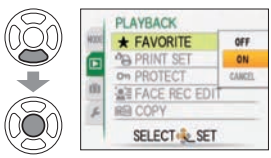
For the [PLAYBACK] menu setting procedure (→20).

★ [FAVORITE]

By labeling your favourite pictures with a star (★), you can enjoy [SLIDE SHOW] or [FAVORITE PLAY] of these pictures only, or you can delete all pictures except your favourites (→45).

Set-up: Press [MENU/SET]→ ▶ [PLAYBACK] menu → Select [FAVORITE]

1 Select [ON]



2 Close the menu



3 Select picture and make setting (repeat)



Displayed when set (not displayed when [OFF]).

- Up to 999 pictures can be selected. (For AVCHD Lite motion pictures, 999 or more pictures can be set. TZ10 ZS7)
- To release → Press ▼ again.

■ To clear all

Select [CANCEL] in step 1 and select [YES].

- It may not be possible to set pictures taken with certain other devices as favourites.
- Setting/release can also be made with supplied software 'PHOTOfunSTUDIO'.

Using the [PLAYBACK] menu (Continued)

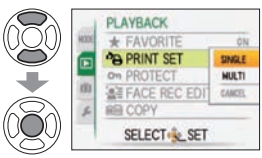
Playback Mode: [▶] (Set mode dial to any except [🎨])

[PRINT SET]

Picture/picture no./date printing settings can be made for when printing with DPOF print-compatible shops or printers. (Ask at shop to check compatibility)

Set-up: Press [MENU/SET]→ [▶] [PLAYBACK] menu → Select [PRINT SET]

1 Select [SINGLE] or [MULTI]

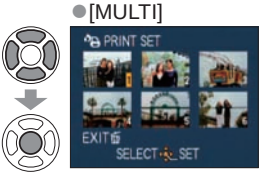


2 Select picture

●[SINGLE]



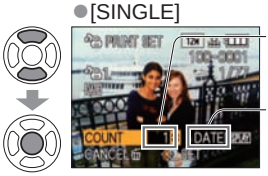
●[MULTI]



3 Set number of pictures

(repeat steps 2 and 3 when using [MULTI] (up to 999 pictures))

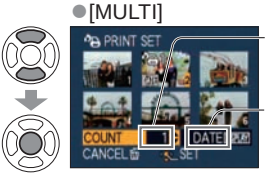
●[SINGLE]



No. to print

Date print set

●[MULTI]



No. to print

Date print set

- Date print setting/release → Press [DISPLAY] button.
- After confirmation, press [🗑] to return to the menu screen.

■ To clear all

Select [CANCEL] in step 1 and select [YES].

- When using PictBridge-compatible printers, check settings on actual printer as these may take priority over camera settings.
- To print from built-in memory at a shop, first copy pictures to card (→137) before making settings.
- Cannot be set for files that are not compliant with the DCF standard (→44).
- Some DPOF information set by other equipment cannot be used. In such cases, delete all of the DPOF information and then set it again with this camera.
- Date printing settings cannot be made for pictures with a [TEXT STAMP] applied. These settings will also be cancelled if a [TEXT STAMP] is applied later.
- Motion pictures recorded in [AVCHD Lite] format cannot be set. TZ10 ZS7

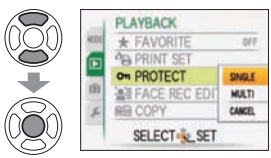
For the [PLAYBACK] menu setting procedure (→20).

[PROTECT]

Set protection to disable picture deletion. Prevents deletion of important pictures.

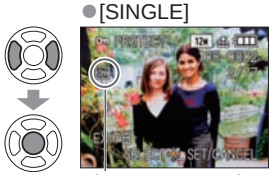
Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [PROTECT]

1 Select [SINGLE] or [MULTI]



2 Select picture and make setting

●[SINGLE]



Picture protected

●[MULTI]



Picture protected

- To cancel → Press [MENU/SET] again.
- After confirmation, press 🗑 to return to the menu screen.

■ **To clear all**

Select [CANCEL] in step 1 and select [YES].

■ **To cancel while releasing all**

Press [MENU/SET].

- May not be effective when using other devices.
- Formatting will cause even protected files to be deleted.
- If the write-protect switch is set to 'LOCK,' pictures cannot be deleted even if they are not protected with the camera setting.

Using the [PLAYBACK] menu (Continued)

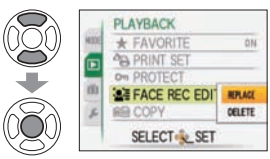
Playback Mode: [▶] (Set mode dial to any except [📷])

[FACE REC EDIT]

Edit or delete the recognition information for pictures with mistaken Face Recognition.

Operation: On the playback screen, press [MENU/SET] and select [▶] [PLAYBACK] menu → [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]



2 Select the picture

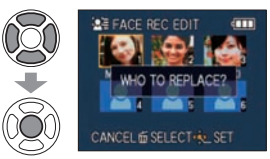


3 Select a person

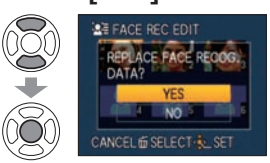


- If [DELETE], go to step 5
- People whose Face Recognition information has not been registered cannot be selected.

4 Select the person to replace for another



5 Select [YES]



- After setting, press [🗑] to return to the menu screen.

- When Face Recognition information is deleted, it cannot be restored.
- Pictures for which all Face Recognition information has been deleted are not categorized in Face Recognition during [CATEGORY PLAY].
- Recognition information cannot be edited in protected pictures.

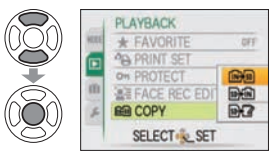
For the [PLAYBACK] menu setting procedure (→20).

[COPY]

You can copy pictures between built-in memory and memory card.

Set-up: Press [MENU/SET] → ▶ [PLAYBACK] menu → Select [COPY]

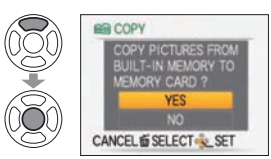
1 Select the copy method (direction)



- IN→SD: Copy all pictures from built-in memory to card (go to step 3). (Clipboard pictures cannot be copied. Use [COPY] in the [CLIPBOARD] menu (→111).)
- SD→IN: Copy 1 picture at a time from card to built-in memory.
- SD→clipboard: Copy 1 picture at a time from card to clipboard folder (in built-in memory) (not motion pictures).

2 Select picture with ◄ ► and press [MENU/SET] (for SD→IN and SD→clipboard)

3 Select [YES]



- To cancel → Press [MENU/SET].
- After confirmation, press 🗑 to return to the menu screen.
- After all the pictures are copied from the built-in memory to the memory card, the display returns automatically to the playback screen.

(Screen shown is example)

- If there is not enough space on the built-in memory for copying to be performed, turn off the power, remove the card, and delete pictures from the built-in memory (to delete clipboard pictures, set the mode dial to Clipboard Mode).
- Copying of picture data from the built-in memory to memory cards will be terminated midway if there is insufficient space on the card. Using memory cards with higher capacities than the built-in memory (approx. 15 MB TZ10 ZS7, approx. 40 MB TZ8 ZS5) is recommended.
- Copying pictures may take several minutes. Do not turn off power or perform other operations during copying.
- If identical names (folder/file numbers) are present in the copy destination, a new folder for copying will be created when copying from built-in memory to card (IN→SD). Identically-named files will not be copied from card to built-in memory (SD→IN).
- The print settings and protection settings are not copied. Set them again after copying.
- Only pictures from Panasonic digital cameras (LUMIX) may be copied.
- Original pictures will not be deleted after copying (to delete pictures (→45)).
- This setting can only be made when the Playback Mode is in [NORMAL PLAY].
- Motion pictures recorded in [AVCHD Lite] format cannot be set. TZ10 ZS7

Keep the recorded still pictures and motion pictures

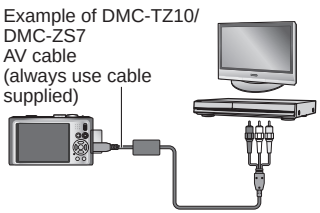
The methods for copying still and motion pictures recorded with this camera to other devices vary according to the file format (JPEG, AVCHD Lite*, Motion JPEG). Follow the correct method for your device.

* TZ10 ZS7 only

Dubbing playback pictures via AV cables

Available file types: Motion AVCHD Lite*, Motion JPEG

Videos that are played on this camera can be dubbed to media such as a DVD disc, hard disk or video tape using a device such as a DVD recorder or video recorder. This method is useful as it allows dubbing to be performed even with devices that are not compatible with high definition (AVCHD) images. Picture quality will be reduced from high definition to standard definition.



1 Connect camera to recorder

2 Start playback on camera

3 Start recording on recorder

- To stop recording (dubbing), stop the recording on your recorder first before stopping the playback on the camera.

- Do not use any other AV cables except the supplied one.
- When using a TV with a 4:3 aspect ratio, always change the camera's [TV ASPECT] setting (→26) to [4:3] before dubbing. Motion pictures copied in the [16:9] setting will appear vertically stretched when viewed on a 4:3 TV screen.
- Pressing the camera's [DISPLAY] button and turning the LCD display off is recommended during dubbing operations. (→46)
- For details on dubbing and playback methods, refer to your recorder's operating instructions.

Use ‘PHOTOfunSTUDIO’ to copy to your computer

Available file types: Still JPEG/ Motion AVCHD Lite*, Motion JPEG

With the ‘PHOTOfunSTUDIO’ software on the supplied CD-ROM, a computer can be used to manage the recorded pictures.

● Main ‘PHOTOfunSTUDIO’ functions

- Copying recorded still pictures or motion pictures to a computer
- Backing up still pictures or motion pictures that have been copied to a computer to media such as a DVD
- Editing still pictures on a computer
- Converting motion pictures recorded in [AVCHD Lite] to standard picture quality to create a DVD video TZ10 ZS7
- Stitching still pictures recorded in Scene Mode [PANORAMA ASSIST] into a panorama
- Attaching recorded still pictures to e-mail
- Uploading recorded motion pictures to YouTube

1 Install ‘PHOTOfunSTUDIO’ to your computer

2 Connect the camera to your computer

- For connection procedures (→141)

3 Use ‘PHOTOfunSTUDIO’ to copy pictures to your computer

- For details on how to use ‘PHOTOfunSTUDIO’, see the ‘PHOTOfunSTUDIO’ manual (PDF).

TZ10 ZS7

Files and folders containing copied AVCHD Lite motion pictures cannot be played back or edited if they have been deleted, modified, or moved using Windows Explorer or similar methods. Always use ‘PHOTOfunSTUDIO’ when handling AVCHD Lite motion pictures.

TZ8 ZS5

The ‘PHOTOfunSTUDIO’ software on the CD-ROM (supplied) can be used to copy still pictures and motion pictures to your computer and to play them back.

Using with your PC

Still/motion pictures can be copied from the camera to your computer by connecting the two together.

- If your computer does not support SDXC memory cards, a message will be displayed requesting you to format the card. (Do not format the card. This will erase recorded pictures.) If the card is not recognised, refer to the following support website. http://panasonic.net/avc/sdcard/information/SDXC.html
- Copied pictures can then be printed out or sent by e-mail using the 'PHOTOfunSTUDIO' software on the CD-ROM (supplied).

■Computer specifications

	Windows			Macintosh
	98/98SE	Me/2000	XP/Vista/7	OS 9/OS X
Can I use 'PHOTOfunSTUDIO'?	No		Yes*1	No
Can I copy AVCHD Lite motion pictures to my computer? TZ10 ZS7	No		Yes*2	No
Can I copy still pictures and Motion JPEG motion pictures from my camera to my computer via USB connection cable?	No	Yes		Yes OS 9.2.2 OS X (10.1 - 10.6)

- USB connection cables cannot be used with Windows 98/98SE, Mac OS 8.x, or older versions of either, but still/motion pictures may still be copied with compatible SD memory card reader/writers.

*1 Internet Explorer 6.0 or above must be installed.
Correct playback and operation depends on your computer's environment and cannot always be guaranteed.

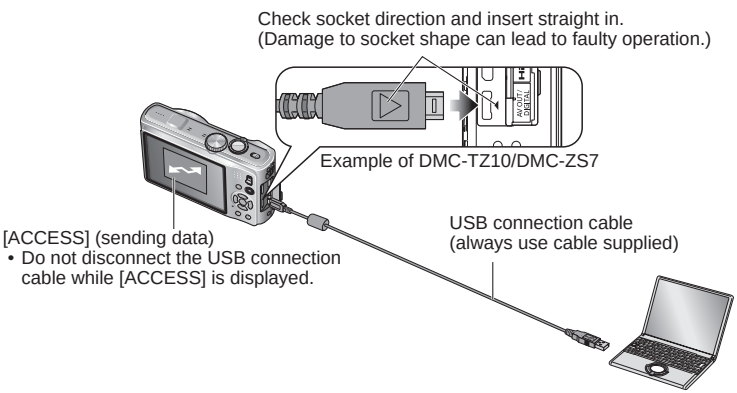
*2 Always use 'PHOTOfunSTUDIO' when copying AVCHD Lite motion pictures. TZ10 ZS7

Some computers can read directly from the camera's memory card.
For details, see the manual for your computer.

Copying still pictures and motion pictures

Getting Ready:

- Charge the battery sufficiently. Or, connect the AC adaptor (optional) and DC coupler (optional). (→14, 15)
- Insert card and set mode dial to any except . When importing pictures from the built-in memory, remove any memory cards.



1 Turn on power of both camera and computer

2 Connect camera to computer

- Please make sure you use the supplied USB connection cable. Use of cables other than the supplied USB connection cable may cause malfunction.

3 Select [PC] on the camera



A message may be displayed on screen if [USB MODE] (→26) is set to [PictBridge (PTP)]. Select [CANCEL] to close the screen, and set [USB MODE] to [PC].

4 Operate with your computer

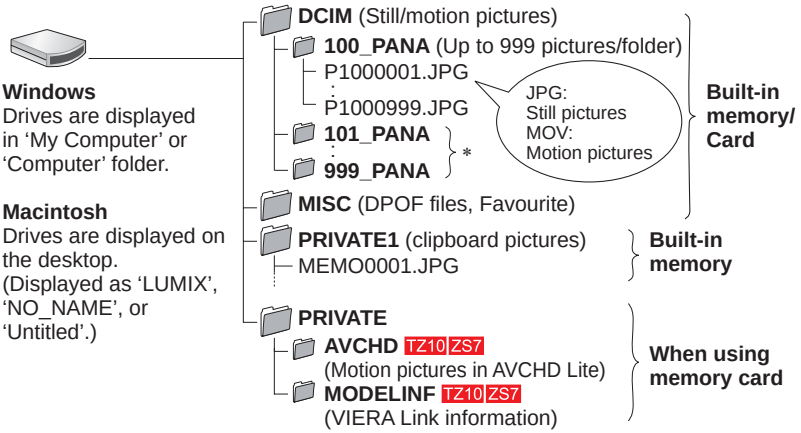
■To cancel connection

Click **'Safely Remove Hardware'** in the Windows System Tray → disconnect USB connection cable → turn off camera power → disconnect AC adaptor

Using with your PC (Continued)

You can save pictures to use on your computer by dragging and dropping folders and files into separate folders on your computer.

■Folder and file names on computer



*New folders are created in the following cases:
- When pictures are taken to folders containing files numbered 999.
- When using cards already containing the same folder number (including pictures taken with other cameras, etc.).
- When recording after performing [NO.RESET] (→25).

- File may not be able to be played back on camera after changing file name.
- If mode dial is set to , built-in memory data (including clipboard pictures) are displayed even when card is inserted. Data in card is not displayed.
- **Do not delete or modify folders or data in the AVCHD folder using Windows Explorer or other tools. The camera may be unable to play back the motion pictures correctly if any of these files are deleted or modified. For data management and editing of motion pictures recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite], use the 'PHOTOfunSTUDIO' software on the supplied CD-ROM.** TZ10 ZS7

■When using Windows XP, Windows Vista, Windows 7, or Mac OS X

The camera can be connected to your computer even if [USB MODE] (→26) is set to [PictBridge (PTP)].
- Only picture output can be performed from the camera. (Picture deletion can also be performed with Windows Vista and Windows 7.)
- It may not be possible to import if there are 1000 or more pictures on the card.
- Motion pictures recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite] format cannot be read. TZ10 ZS7

■Playing motion pictures recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite] on your computer TZ10 ZS7

①Use the ‘PHOTOfunSTUDIO’ software on the supplied CD-ROM.
②Save the motion picture to your computer, and play it back.

■Playing motion pictures recorded in [MOTION JPEG] on your computer

①Use the ‘QuickTime’ software on the supplied CD-ROM.
• Installed as standard on Macintosh
②Save motion pictures to your computer before viewing.

- Do not use any other USB connection cables except the supplied one.
- Turn off power before inserting or removing memory cards.
- When the battery begins to run out during communication, a warning beep sounds. Cancel communication via your computer immediately (recharge the battery before reconnecting).
- Setting the [USB MODE] (→26) to [PC] removes the need to make the setting each time the camera is connected to the computer.
- For more details, consult your computer operating manual.

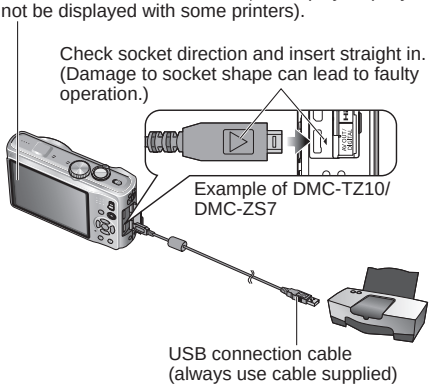
Printing

You can connect directly to a PictBridge-compatible printer for printing.

Getting Ready:

- Charge the battery sufficiently. Or, connect the AC adaptor (optional) and DC coupler (optional).
- Insert card and set mode dial to any setting except . When copying pictures from the built-in memory, remove any memory cards. (Copy [CLIPBOARD] pictures to the card in advance)
- Adjust the print quality or other settings on your printer, as needed.

- Do not disconnect the USB connection cable when the cable disconnection icon is displayed (may not be displayed with some printers).



1 Turn on power of camera and printer

2 Connect camera to printer

- Please make sure you use the supplied USB connection cable. Use of cables other than the supplied USB connection cable may cause malfunction.

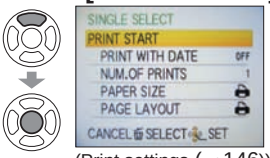
3 Select [PictBridge (PTP)] on the camera



When [CONNECTING TO PC…] is displayed, cancel the connection and set [USB MODE] (→26) to either [SELECT ON CONNECTION] or [PictBridge (PTP)].

4 Press ◄► to select a picture to print and press [MENU/SET]

5 Select [PRINT START]



(Print settings (→146))

■To cancel print Press [MENU/SET]

- Do not use any other USB connection cables except the supplied one.
- Disconnect USB connection cable after printing.
- Turn off power before inserting or removing memory cards.
- When the battery begins to run out during communication, a warning beep sounds. Cancel printing and disconnect USB connection cable (recharge the battery before reconnecting).
- Setting the [USB MODE] to [PictBridge (PTP)] removes the need to make the setting each time the camera is connected to the printer.
- Motion pictures recorded in [AVCHD Lite] format cannot be printed. TZ10 ZS7

Some printers can print directly from the camera's memory card.
For details, see the manual for your printer.

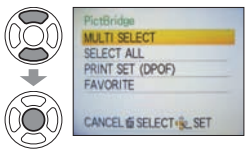
Printing multiple pictures

① **Select [MULTI PRINT] in step 4 on the previous page**

② **Select item** (See below for details)

③ **Print** (Previous page 5)





- **[MULTI SELECT]** :① Scroll between pictures with ▲▼◄►, select pictures to print with the [DISPLAY] button. (Press [DISPLAY] button again to release selection.)
 ② Press [MENU/SET] when selection is complete.
- **[SELECT ALL]** :Print all pictures.
- **[PRINT SET (DPOF)]** :Print pictures selected in [PRINT SET]. (→134)
- **[FAVORITE]** :Print pictures selected as [FAVORITE]. (→133)
 (displayed only when [FAVORITE] pictures are present and setting is set to [ON]).

- Select [YES] if print confirmation screen is displayed.
- An orange ● displayed during printing indicates an error message.
- Print may be divided into several times if printing a large amount of pictures. (Remaining sheets display may differ from set number.)

Print with date and text

■ With [TEXT STAMP]

Recording date and following information can be embedded into still pictures (→128):

- Recording date ●[NAME] and [AGE] from [BABY] and [PET] Scene Modes
- [TRAVEL DATE] elapsed days and destination ●Text registered in [TITLE EDIT]
- Names registered in [FACE RECOG.]
- Location name information recorded with the GPS function TZ10 ZS7
 - Do not add date printing in stores or with printers to still pictures where [TEXT STAMP] is applied (text may overlap).

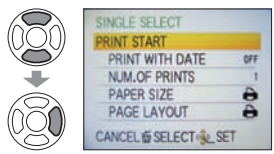
■ Printing date without [TEXT STAMP]

- Printing in store: Only recording date can be printed. Request date printing in store.
 - Making [PRINT SET] settings on the camera in advance allows settings for numbers of copies and date printing to be designated before giving the card to the store.
 - When printing still pictures of 16:9 Aspect Ratio, check in advance that the store can accept this size.
- Using computer :Print settings for recording date and text information can be made using the supplied CD-ROM 'PHOTOfunSTUDIO'.
- Using printer :Recording date can be printed by setting [PRINT SET] on the camera, or by setting [PRINT WITH DATE] to [ON] when connecting to a printer compatible with date printing.

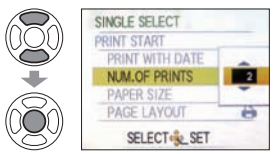
Making print settings on camera

(Make settings before selecting [PRINT START])

① **Select item**



② **Select setting**



Item	Settings
[PRINT WITH DATE]	[OFF]/[ON]
[NUM.OF PRINTS]	Set number of pictures (up to 999 pictures)
[PAPER SIZE]	**(printer takes priority)** **[L/3.5”×5”]** (89×127 mm) **[2L/5”×7”]** (127×178 mm) **[POSTCARD]** (100×148 mm) **[16:9]** (101.6×180.6 mm) **[A4]** (210 ×297 mm) **[A3]** (297×420 mm) **[10×15 cm]** (100×150 mm) **[4”×6”]** (101.6×152.4 mm) **[8”×10”]** (203.2 ×254 mm) **[LETTER]** (216×279.4 mm) **[CARD SIZE]** (54×85.6 mm)
[PAGE LAYOUT]	**(printer takes priority) / (1 picture, no border) / (1 picture, with border) / (2 pictures) / (4 pictures)**

- Items may not be displayed if incompatible with printer.
- To arrange ‘2 pictures’ or ‘4 pictures’ in the same still picture, set the number of prints for the still picture to 2 or 4.
- To print to paper sizes/layouts not supported by this camera, set to and make settings on the printer. (Consult your printer’s operating manual.)
- [PRINT WITH DATE] and [NUM.OF PRINTS] are not shown when you have selected [PRINT SET] settings.
- Even with completed [PRINT SET] settings, dates may not be printed, depending on the shop or printer used.
- When setting [PRINT WITH DATE] to [ON], check the date printing settings on the printer (printer settings may be prioritized).

Viewing on TV screen

You can view pictures on a TV screen by connecting your camera to your TV with the AV cable (supplied) or HDMI mini cable (optional TZ10 ZS7).
- Also consult TV operating manual.

Getting Ready:
- Set [TV ASPECT]. (→26)
- Turn off both camera and TV.

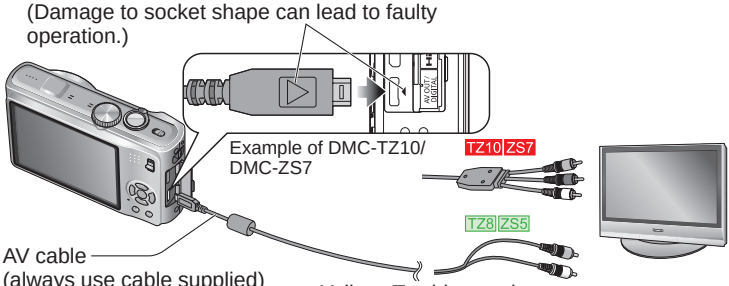
1 Connect camera to TV

2 Turn on TV
- Set to auxiliary input.

3 Turn on camera

4 Set REC/PLAY switch to ▶

Check socket direction and insert straight in. (Damage to socket shape can lead to faulty operation.)



Yellow: To video socket
White: To audio socket TZ10 ZS7 (L) TZ8 ZS5 (Monaural)
Red: To audio socket (R) TZ10 ZS7

■When TVs or DVD recorders have an SD card slot

Insert the SD memory card into the SD card slot
- Still pictures only can be played back. TZ8 ZS5
- AVCHD Lite motion pictures can be played back on Panasonic televisions (VIERA) displaying the AVCHD logo. TZ10 ZS7
 To play motion pictures on other televisions, please connect the camera to the television with the AV cable (supplied).
- When using both SDHC and SDXC memory cards, be sure to play each type of card in equipment compatible with the particular format.

- Do not use any other AV cables except the supplied one.
- You can play back pictures on TVs in other countries (regions) which use the NTSC or PAL system when you set [VIDEO OUT] in [SETUP] menu.
- [LCD MODE] setting is not reflected on TV.
- Some televisions may cut off the edges of pictures, or not display them full screen. Pictures rotated to portrait may be blurred slightly.
- Change picture mode settings on TV if aspect ratios are not displayed correctly on widescreen or high-definition televisions.

Viewing on TV screen (Continued)

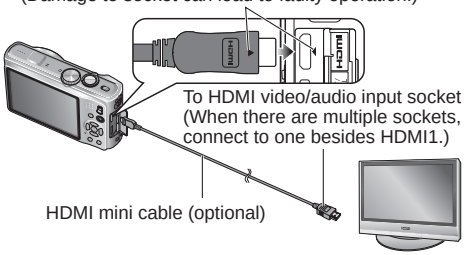
Viewing on a TV with HDMI Socket

An HDMI mini cable (optional) can be used to enable viewing of still and motion pictures in high resolution.

What is HDMI?
High-Definition Multimedia Interface (HDMI) is an interface for digital video devices. Digital video and audio signals can be output by connecting the camera to an HDMI-compatible device. This camera can be connected to a High-definition TV compatible with HDMI to enjoy recorded pictures and motion pictures at high resolution. Connecting the camera to a Panasonic TV (VIERA) compatible with VIERA Link (HDMI) enables linked operation (VIERA Link). (→149)

Preparation:
- Check the [HDMI MODE]. (→27)
- Turn off the camera and TV.

Check the socket direction and insert straight in.
(Damage to socket can lead to faulty operation.)



1 Connect camera to TV

2 Turn on TV
- Set to HDMI input.

3 Turn on camera

4 Set REC/PLAY switch to ▶

- Do not use any other cables except a genuine Panasonic HDMI mini cable (optional).
- Playback cannot be performed in [CLIPBOARD] Mode.
- Blank stripes may appear at the sides or at the top and bottom of the screen, depending on Aspect Ratio setting.
- Cables that do not comply with HDMI standards will not work.
- When an HDMI mini cable is connected, pictures are not displayed on the LCD monitor.
- The following functions are not available:
 [TITLE EDIT], [VIDEO DIVIDE], [TEXT STAMP], [RESIZE], [CROPPING], [LEVELING], [ASPECT CONV.] [FACE REC EDIT], [COPY], multiple selection (delete, etc.), etc.
- HDMI output will be cancelled if a USB connection cable is connected simultaneously.
- No picture output will occur through AV cables connected.
- When playing motion pictures/still pictures with audio recorded with other devices, video/audio may not always be played back correctly.
- Pictures may be momentarily distorted immediately after commencing playback or pausing on certain televisions.
- Always read your television's operating instructions.
- Audio output is stereo.

The DMC-TZ8/DMC-ZS5 does not have an HDMI socket.

VIERA Link (HDMI) (HDAVI Control™)

What is VIERA Link (HDMI)?

- VIERA Link is a function that automatically links this camera to VIERA Link-compatible devices by connecting HDMI mini cables (optional) for enabling easy operation with the VIERA remote control. (Some operations are not available.)
- VIERA Link (HDMI) is an exclusive Panasonic function added to the industry-standard HDMI control functions known as HDMI CEC (Consumer Electronics Control). Operation is not guaranteed when connecting with non-Panasonic HDMI CEC-compatible devices. Refer to your product manual to verify compatibility with VIERA Link (HDMI).
- This camera supports VIERA Link (HDMI) Version 5. This is the latest Panasonic standard that also supports previous Panasonic VIERA Link devices. (As of December 2009)

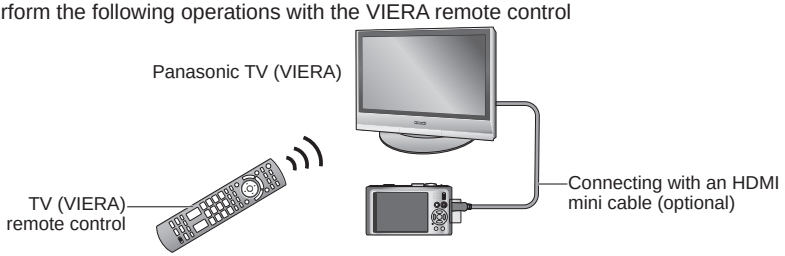
Preparation: • Set [VIERA Link] to [ON]. (→27)

1 Connect the camera to a VIERA Link (HDMI)-compatible Panasonic television (VIERA) with an HDMI mini cable (optional) (→148).

2 Turn on camera

3 Set REC/PLAY switch to ▶

Perform the following operations with the VIERA remote control

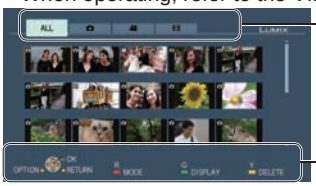


(Continued on the next page)

Viewing on TV screen (Continued)

4 Select a picture with ▲▼◄►, and press [OK]

• When operating, refer to the VIERA Link operating panel.



Types of pictures displayed (switch between them with the red button)

Operating panel

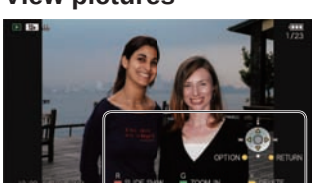
■Switching Playback Mode

You can press [OPTION] to switch between Playback Modes.

[NORMAL PLAY]	Plays back all subject pictures.
[SLIDE SHOW]	Plays back pictures as a Slide Show.
[GPS AREA PLAY]	Plays back pictures for which place name information has been recorded, by place name.
[TRAVEL PLAY]	Plays back pictures for which [TRAVEL DATE] has been set.
[CATEGORY PLAY]	Plays back pictures by category.
[CALENDAR]	Displays calendar screen and plays back pictures by recording date.
[FAVORITE PLAY]	Plays back pictures that have been set as [FAVORITE].

● Refer to camera operations for operations and settings. (These may differ partially.)

5 View pictures



Operating panel

• The operating panel turns off automatically if it has not been operated for about 5 seconds. (If any button is pressed, the panel will be displayed again.) If you wish to dim the operating panel, press [RETURN].
• Playback of motion pictures/still pictures with audio → press [OK].
• Slide Show playback → press the red button.
• Slide Show settings → press [OPTION].
• To display the picture information → press ▲.
• To return to the previous screen → press ▼.

The DMC-TZ8/DMC-ZS5 does not support VIERA Link.

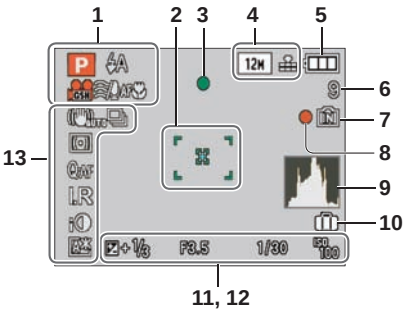
■Other related operations

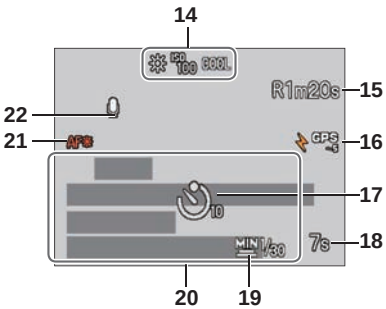
- Power OFF
 The camera's power can also be switched off when switching the television's power off with the remote control.
- Automatic input select
 - This function automatically switches the television input to the camera screen whenever the camera's power is switched on while it is connected via the HDMI mini cable. The television can also be switched on via the camera from Standby Mode (if 'Power on link' on the television is set to 'on').
 - The input setting may not be able to be changed automatically with certain television HDMI sockets. In this case, please change the input setting with your television remote control (consult your television operating instructions for details).
 - If VIERA Link (HDMI) does not function correctly (→161)

- Do not use any other cables except a genuine Panasonic HDMI mini cable (optional).
- The shape of remote control will differ depending on the country or area where the TV was purchased.
- Cables that do not comply with HDMI standards will not work.
- If you are unsure whether or not the TV you are using is compatible with VIERA Link, read the operating instructions for the TV.
- If the [VIERA Link] setting on the camera is [ON], operations via the camera buttons will be limited.
- Ensure that the television you are connecting to has been set up to enable VIERA Link (HDMI) (consult your television operating instructions for details).
- If you do not wish to use VIERA Link (HDMI), turn the camera's [VIERA Link] setting [OFF].
- When operating with VIERA Link, the [HDMI MODE] (→27) of the camera is selected automatically.
- When playing back AVCHD Lite motion pictures on this camera that were recorded with another camera, the resolution may change automatically. If this happens, the screen may go dark for a while, but this is not a malfunction.
- If the tab on the TV screen is selected, it will not be possible to select either ([AVCHD Lite]), or ([MOTION JPEG]) in [SLIDE SHOW] [CATEGORY SELECTION].

List of LCD monitor displays

In recording





1 Recording Mode
(TZ10 ZS7 →31, 108, TZ8 ZS5 →33)
Flash (→47)
Recording quality TZ10 ZS7 (→108)
AF Tracking (→36, 99)
Wind cut TZ10 ZS7 (→109)
Macro recording (→49)

2 AF area (→37)
Spot AF area (→100)
Spot metering target (→101)

3 Focus (→34)

4 Picture Size (→95)
Quality (→96)

5 Battery capacity (→16)

6 Number of recordable pictures
(TZ10 ZS7 →174, TZ8 ZS5 →176)

7 Save destination (→16)

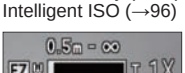
8 Recording state

9 Histogram (→46)

10 Travel Date (→90)

11 Exposure Compensation (→53)
Aperture value/Shutter speed (→37, 56, 57, 58)
ISO Sensitivity (→97)
Intelligent ISO (→96)

12



Focus range (→51)
Zoom (→39)/Macro Zoom (→50)

13 Optical Image Stabilizer (→105)/
Jitter alert (→37)
Metering Mode (→101)
Pre AF (→101)
Burst Mode (→103)
Auto Bracket (→54)
Multi Aspect (→55)
I.resolution (→41, 103)
Intelligent exposure (→102)
LCD Mode (→23)
LCD power save (→24)

14 White Balance (→98)
ISO Sensitivity (→97)/ISO max (→96)
Colour effect (→104)

15 Available recording time
(TZ10 ZS7 →72, TZ8 ZS5 →76)

16 GPS TZ10 ZS7 (→84)

17 Self-timer Mode (→52)

18 Elapsed recording time
(TZ10 ZS7 →72, TZ8 ZS5 →76)

19 Minimum shutter speed (→102)

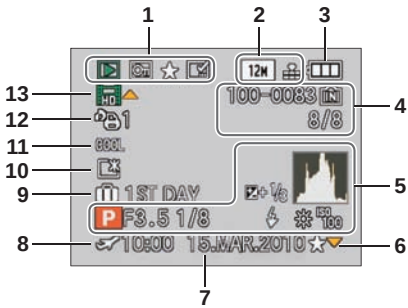
20 Travel elapsed days
(TZ10 ZS7 →90, TZ8 ZS5 →91)
Age in years/months (→65, 80)
Destination settings (→92)
Place name information (→84)
Current date/time (→17, 19)

21 Audio recording (→106)

22 AF Assist Lamp (→106)

Press the [DISPLAY] button to change display (→46).

In playback



1 Playback Mode (→118)
Protected picture (→135)
Favourites (→133)
Text stamped display (→128)

2 Picture size (→95)
Quality (→96)

3 Battery capacity (→16)

4 Folder/File number (→25, 44, 142)
Picture number/Total pictures (→44)
Motion picture recording time/
Elapsed playback time (→115)
Save destination (→16)

5 GPS TZ10 ZS7 (→84)
Histogram (→46)
Recording information

6 Favourites settings (→133)

7 Recorded date and time
Place name information* (→84)
Destination* (→92)
Name* (→65, 78)
Title* (→126)

8 Destination settings (→93)

9 Travel elapsed days (→90)

10 LCD Mode (→23)

11 Colour effect (→104)

12 Quantity of pictures to print (→134)

13 Motion pictures/Still picture with audio (→115)
Cable disconnection warning icon (→144)

* The order of priority for display is location name information, title, destination, name ([BABY]/[PET]), name ([FACE RECOG.]).

Screens shown here are only examples. The actual display may vary.

Message displays

[THIS MEMORY CARD CANNOT BE USED]

- A MultiMediaCard was inserted.
 → Not compatible with the camera. Use a compatible card.

[THIS MEMORY CARD IS WRITE-PROTECTED]

- Unlock the write-protect switch on the card. (→16)

[NO VALID PICTURE TO PLAY]

- Take pictures, or insert a different card already containing pictures.

[THIS PICTURE IS PROTECTED]

- Release the protection before deleting, etc. (→135)

[SOME PICTURES CANNOT BE DELETED] [THIS PICTURE CANNOT BE DELETED]

- Non-DCF pictures (→44) cannot be deleted.
 → Save needed data on a computer or other device, and then use [FORMAT] on the camera to erase the card. (→28)

[NO ADDITIONAL SELECTIONS CAN BE MADE]

- The number of pictures that can be deleted at once has been exceeded.
- More than 999 pictures have been set as favourites. (Other than AVCHD Lite motion pictures TZ10 ZS7)
- The number of pictures allowing [TITLE EDIT], [TEXT STAMP] or [RESIZE] (multiple settings) at once has been exceeded.

[CANNOT BE SET ON THIS PICTURE]

- [PRINT SET], [TITLE EDIT], or [TEXT STAMP] cannot be made for non-DCF pictures (→44).

[PLEASE TURN CAMERA OFF AND THEN ON AGAIN] [SYSTEM ERROR]

- The lens is not working correctly.
 → Turn on power again.
 (Consult the dealer or your nearest Service Centre if display still remains)

[SOME PICTURES CANNOT BE COPIED] [COPY COULD NOT BE COMPLETED]

- Pictures cannot be copied in following cases.
 → Picture of same name already exists in built-in memory when copying from card.
 → File is not of DCF standard.
 → Picture taken or edited on a different device.

[NOT ENOUGH SPACE ON BUILT-IN MEMORY] [NOT ENOUGH MEMORY ON THE CARD]

- There is no space left on the built-in memory or the card. When you copy pictures from the built-in memory to the card (batch copy), the pictures are copied until the capacity of the card becomes full.

[BUILT-IN MEMORY ERROR] [FORMAT BUILT-IN MEMORY?]

- Displayed when formatting built-in memory via computer, etc.
 → Reformat directly using camera. Data will be deleted.

[MEMORY CARD ERROR] [FORMAT THIS CARD?]

- The card format cannot be used with this camera.
 → Save needed data on a computer or other device, and then use [FORMAT] on the camera. (→28)

[INSERT SD CARD AGAIN] [TRY ANOTHER CARD]

- Access to card has failed.
 → Insert card again.
- Try with a different card.

Meanings of and required responses to major messages displayed on LCD monitor.

[MEMORY CARD ERROR] [MEMORY CARD PARAMETER ERROR]

- Card is not of SD standard.
- When cards in capacities of 4 GB or more are used, only SDHC or SDXC memory cards are supported.

[READ ERROR]/[WRITE ERROR] [PLEASE CHECK THE CARD]

- Data read has failed.
 → Check whether card has been inserted correctly (→14).
- Data write has failed.
 → Turn off power and remove card, before re-inserting and turning on power again.
- Card may possibly be damaged.
- Try with a different card.

[CANNOT RECORD DUE TO INCOMPATIBLE FORMAT(NTSC/PAL) DATA ON THIS CARD.]

- A card that has been used in another camera to record an AVCHD motion picture in a different broadcast system cannot be used to record AVCHD Lite motion pictures with this camera.
 → Format the card with this camera. The data will be deleted.

[MOTION RECORDING WAS CANCELLED DUE TO THE LIMITATION OF THE WRITING SPEED OF THE CARD]

- Using a card of SD speed ‘Class 4’* or above is recommended for recording motion pictures in [AVCHD Lite(GPS REC)]/[AVCHD Lite]. TZ10 ZS7
 Using a card of SD speed ‘Class 6’* or above is recommended for recording motion pictures in ‘MOTION JPEG’.
 * The SD speed class is a speed rating for continuous writing.
- If recording stops even when using the card above, the data writing speed is low. We recommend backing up the data on the memory card and reformatting it (→28).
- Motion picture recording may be automatically terminated with certain cards.

[A FOLDER CANNOT BE CREATED]

- Folder numbers in use have reached 999.
 → Save all necessary data to computer (or other device), and [FORMAT] (→28).
 Folder number is reset to 100 when performing [NO.RESET] (→25).

[PICTURE IS DISPLAYED FOR 16:9 TV] [PICTURE IS DISPLAYED FOR 4:3 TV]

- AV cable is connected to camera.
 → To remove message immediately → Press [MENU/SET].
 → To change aspect ratio → Change [TV ASPECT] (→26).
- USB connection cable is only connected to camera.
 → Message disappears when cable is also connected to another device.

[THIS BATTERY CANNOT BE USED]

- Use a genuine Panasonic battery.
- Battery cannot be recognised as terminal is dirty.
 → Wipe any dirt away from the battery terminal.

[NO BATTERY POWER REMAINS]

- The battery level is low.
 → Charge the battery before use. (→11)

[GPS FEATURE IS NOT AVAILABLE IN THIS REGION.] TZ10 ZS7

- GPS may not work in China or in the border regions of countries neighboring China. (Current as of February 2010)

Battery, power

Camera does not work even if power is turned on.

- Battery is not inserted correctly (→14), or needs recharging.

LCD monitor shuts off even if power is turned on.

- [SLEEP MODE] is activated. (→24)
 → Press shutter button halfway to release.
- Battery needs recharging.

Camera switches off as soon as power is turned on.

- Battery needs recharging.
- Camera is set to [SLEEP MODE]. (→24)
 → Press shutter button halfway to release.

This unit is turned off automatically.

- If you connect to a TV compatible with VIERA Link with an HDMI mini cable (optional) and turn off the power on the TV with the remote control for the TV, the power on this unit also turns off.
 → If you are not using VIERA Link, set [VIERA Link] to [OFF]. (→27) TZ10 ZS7

GPS TZ10 ZS7

Cannot perform positioning.

- When [GPS SETTING] is set to [OFF]. (→85)
- Depending on the recording environment, such as when indoors or near buildings, it may not be possible to correctly receive the signals from the GPS satellites. (→84)
 → When using the GPS, we recommend holding the camera still for a while with the GPS antenna facing upward in an outdoor location where you can see the entire sky.

The status indicator flashes while the camera's power is off.

- [GPS SETTING] is [ON].
- When turning off the camera's power in an airplane, hospital or other restricted area, set [GPS SETTING] to [OFF] or GPS.

Positioning takes time.

- When using the camera for the first time or after not using it for a while, positioning may take several minutes.
- Positioning usually takes less than two minutes, but because the positions of the GPS satellites change, it may take longer depending on the recording location and environment.
- Positioning will take time in environments where it is difficult to receive the signals from the GPS satellites. (→84)

The location name information is different from the recording location.

- Immediately after the camera's power is turned on or when the GPS icon is something other than GPS, the location name information that is recorded in the camera may vary significantly from the current position.
- When GPS is displayed for the location name information, the information can be changed to a different candidate before starting to record. (→87)

The location name information is not displayed.

- "- - -" is displayed if there is no nearby landmark or other points, or no information registered in the camera's database. (→87)
 → During playback, a location name or other information can be entered with [PLACE-NAME EDIT]. (→127)

Try checking these items (→156 - 162) first.
(Restoring menu settings to default values may solve certain problems.
Try using [RESET] in [SETUP] menu in Recording Mode (→26).)

Recording

Cannot record pictures.

- REC/PLAY switch is not set to (record).
- Built-in memory/card is full. → Free space by deleting unwanted pictures (→45).

Cannot record to cards.

- The card was formatted with a different device.
 → **Please format cards with this camera. (→28)**
- **For details about compatible cards (→16).**

Recording capacity is low.

- Battery needs recharging .
 → Use a fully charged battery (not sold pre-charged). (→11)
 → If you leave the camera on, the battery will be exhausted. Turn the camera off frequently by using [SLEEP MODE] (→24) etc.
- Please check the recording picture capacity for cards and built-in memory. (TZ10 ZS7 →174, TZ8 ZS5 →176)

Recorded pictures look white.

- Lens is dirty (fingerprints, etc.).
 → Turn on power to extract lens barrel, and clean lens surface with a soft, dry cloth.
- Lens is foggy (→7).

Recorded pictures are too bright/too dark.

- **Pictures taken in dark locations, or bright subjects (snow, bright conditions, etc.) occupy most of the screen. (Brightness of LCD monitor may differ from that of actual picture)**
 → Adjust the exposure (→53).
- **[MIN. SHTR SPEED] is set to fast speeds, e.g. [1/250] (→102).**

2-3 pictures are taken when I press the shutter button just once.

- Camera set to use [AUTO BRACKET] (→54), [MULTI ASPECT] (→55), [BURST] (→103), or the [HI-SPEED BURST] (→66) or [FLASH BURST] (→67) Scene Modes.

Focus not aligned correctly.

- Not set to mode appropriate for distance to subject. (Focus range varies according to Recording Mode.)
- Subject outside of focus range.
- Caused by jitter or subject movement (→96, 105).

Recorded pictures are blurred. Optical Image Stabilizer ineffective.

- Shutter speed is slower in dark locations and Optical Image Stabilizer is less effective.
 → Hold camera firmly with both hands, keeping arms close to body.
- Use a tripod and the self-timer (→52) when using slower shutter speed with [MIN. SHTR SPEED].

Cannot use [AUTO BRACKET] or [MULTI ASPECT].

- Only enough memory for 2 pictures or fewer.

Recorded pictures appear coarse, or there is interference.

- ISO Sensitivity is high, or shutter speed is low.
 (Default [SENSITIVITY] setting is [AUTO] – interference may appear with indoor pictures.)
 → Lower [SENSITIVITY] (→97).
 → Set [NOISE REDUCTION] in [PICT.ADJ.] in the + direction. (→105)
 → Take pictures in brighter locations.
- Camera set to [HIGH SENS.] or [HI-SPEED BURST] Scene Modes.
 (Picture becomes slightly coarser in response to high sensitivity)

Pictures appear dark or have poor colouring.

- Colours may appear unnatural due to the effects of light source.
 → Use [WHITE BALANCE] to adjust the colouring. (→98)

Recording (continued)

Brightness or colouring of recorded picture different from real life.

- Taking pictures under fluorescent lighting may require a faster shutter speed and result in slightly changed brightness or colouring, but this is not a fault.

Red banding may appear on the LCD monitor or part or the entire screen may have a reddish tint, when recording or pressing the shutter button halfway.



- This is a characteristic of CCD and may appear if subject contains brighter areas. Some blurring may occur around these areas, but this is not a fault. This will be recorded in motion pictures, but not in still pictures.
- We recommend keeping the screen away from strong light sources such as sunlight when taking pictures.

Motion picture recording stops midway.

- With some cards, access display may appear briefly after recording, and recording may end midway.
- Using a card of SD speed 'Class 4'* or above is recommended for recording motion pictures in [AVCHD Lite(GPS REC)]/[AVCHD Lite]. TZ10 ZS7
 Using a card of SD speed 'Class 6'* or above is recommended for recording motion pictures in 'MOTION JPEG'.
 * The SD speed class is a speed rating for continuous writing.
- If recording stops even when using the card above, the data writing speed is low. We recommend backing up the data on the memory card and reformatting it (→28).

The subject cannot be locked. (AF track fails)

- If the subject has different colours as the periphery, set the AF area to those colours specific to the subject by aligning that area with the AF area. (→100)

LCD monitor

LCD monitor dims during motion picture recording.

- LCD monitor may dim if continuing motion picture recording for long periods.

Brightness is unstable.

- Aperture value is set while shutter button is pressed halfway.
 (Does not affect recorded picture.)

Monitor flickers indoors.

- Monitor may flicker after turning on (prevents influence from fluorescent lighting).

Monitor is too bright/too dark.

- Camera set to [LCD MODE] (→23).

Black/blue/red/green dots or interference appears. Monitor looks distorted when touched.

- This is not a fault, and will not be recorded on the actual pictures, so there is no need to worry.

Date/age is not displayed.

- Current date, travel elapsed days (→90), and names and ages in [BABY] and [PET] (→65) Scene Modes are only displayed for approx. 5 sec. when the camera is turned on, after these settings are made, or after switching from Playback Mode to Recording Mode, etc. They cannot be always displayed.

Flash

No flash emitted.

- Flash set to [FORCED FLASH OFF] (→47).
- When set to [AUTO] , flash may not be emitted in certain conditions.
- Flash cannot be emitted in the [SCENERY], [PANORAMA ASSIST], [NIGHT SCENERY], [SUNSET], [HI-SPEED BURST], [STARRY SKY], [FIREWORKS], and [AERIAL PHOTO] Scene Modes, or when using [AUTO BRACKET] or [BURST].
- No flash is emitted when recording a motion picture.

Multiple flashes are emitted.

- Red-eye reduction is active (→47). (Flashes twice to prevent eyes appearing red.)
- The Scene Mode is set to [FLASH BURST].

Playback

Pictures have been rotated.

- [ROTATE DISP.] is set to [ON].
 (Automatically rotates pictures from portrait to landscape. Some pictures taken facing up or facing down may be interpreted as being portrait.)
 → Set [ROTATE DISP.] to [OFF].(→132)

Cannot view pictures. There are no recorded pictures.

- REC/PLAY switch is not set to (play).
- No pictures in built-in memory or card (pictures played from card if inserted, from built-in memory if not).
- The Playback Mode has been changed.
 → Set Playback Mode to [NORMAL PLAY] (→118).

Folder/file number displayed as [-]. Picture is black.

- Picture edited on computer or taken on different device.
- Battery removed immediately after picture taken, or picture taken with low battery.
 → Use [FORMAT] to delete (→28).

Incorrect date displayed in Calendar Playback.

- Picture edited on computer or taken on different device.
- [CLOCK SET] is incorrect (→17, 19).
 (Incorrect date may be displayed in Calendar Playback on pictures copied to computer and then back to camera, if computer and camera dates differ.)

Depending on the subject, an interference fringe may appear on the screen.

- This is called moire. This is not a malfunction.

White round spots like soap bubbles appear on the recorded picture.

- If you take a picture with the flash in a dark place or indoors, white round spots may appear on the picture caused by the flash reflecting particles of dust in the air. This is not a fault. A characteristic of this is that the number of round spots and their position differ in every picture.



[THUMBNAIL IS DISPLAYED] is shown on the screen.

- The pictures may have been recorded on another device. If so, they may be displayed with poor picture quality.

Playback (continued)

Blacken red areas of recorded pictures.

- When digital red-eye correction (, ,) is operating, if a subject is recorded that has skin-coloured areas with red areas inside, the digital red-eye correction function may blacken the red areas.
 → We recommend setting the flash to , or , or [RED-EYE REMOVAL] to [OFF] before recording.

Sounds of camera operations will be recorded in motion pictures.

- Camera operation sounds may be recorded as camera automatically adjusts lens aperture during motion picture recording; this is not a fault.

Motion pictures still and pictures with audio taken by this camera cannot be played in other cameras.

- Motion pictures and pictures with audio taken with this camera may not always be able to be played back with cameras by other manufacturers. Playback may also not be possible with certain Panasonic digital cameras (LUMIX).* TZ10 ZS7
 * Cameras launched before December 2008, and some cameras launched in 2009 (FS, LS Series).
- Motion pictures recorded in [AVCHD Lite]* format cannot be played in devices that do not support AVCHD. In some cases, motion pictures cannot be played back correctly in AVCHD-compatible devices. TZ10 ZS7
 * Motion pictures recorded in [AVCHD Lite(GPS REC)] cannot be played back with Panasonic digital cameras (LUMIX) compatible with AVCHD (Lite) recording that were sold in or before 2009.
- In some cases, motion pictures and pictures with audio taken by this camera cannot be played back by digital cameras from other companies, and they also cannot be played in Panasonic digital cameras (LUMIX) that were sold before July 2008. TZ8 ZS5

TV, computer, printer

No image appears on TV. Image blurred or not coloured.

- Not connected correctly (→147, 148).
- The television has not been switched to auxiliary input.
- The television does not support the type of card used.
- Check the [VIDEO OUT] setting (NTSC/PAL) on the camera. (→26)

TV screen display different to LCD monitor.

- Aspect ratio may be incorrect or edges may be cut off with certain televisions.

Cannot play motion pictures on TV.

- Card is inserted into TV.
 → Connect with AV cable (supplied) or HDMI mini cable (optional) TZ10 ZS7 and play on camera (→147, 148).

Picture is not displayed on full TV screen.

- Check [TV ASPECT] settings (→26).

TV, computer, printer (continued)

VIERA Link (HDMI) is not working. TZ10 ZS7

- Is the HDMI mini cable (optional) connected correctly? (→148)
 → Check that the HDMI mini cable (optional) is fully inserted.
- Is the camera's [VIERA Link] setting set to [ON]? (→27)
 → The input setting may not be able to be changed automatically with certain television HDMI sockets. In this case, please change the input setting with your television's remote control (consult your television's operating instructions for details).
 → Check the VIERA Link (HDMI) settings on the device you are connecting to.
 → Turn the camera's power off and on again.
 → Turn the 'VIERA Link control (HDMI device control)' setting on your television (VIERA) to 'off', and then to 'on' again. (Consult your VIERA's operating instructions for details.)

Cannot send pictures to computer.

- Not connected correctly (→141).
- Check whether computer has recognised camera.
- Set [USB MODE] to [PC] (→26).

Computer does not recognise card (only reads built-in memory).

- Disconnect USB connection cable and reconnect with card in place.
- Set mode dial to any except .

Computer does not recognise card. (When using an SDXC memory card)

→ Check whether your computer is compatible with SDXC memory cards.
http://panasonic.net/avc/sdcard/information/SDXC.html
→ A message prompting you to format the card may appear when you connect it. Do not format the card.
→ If the [ACCESS] indicator on the LCD monitor does not go off, turn off the camera's power before disconnecting the USB connection cable.

I want to play computer pictures on my camera.

- Use the supplied software 'PHOTOfunSTUDIO' to copy pictures from computer to camera.
- To save to clipboard, use software to copy from computer to card, then copy to clipboard folder with [COPY] (→137) in [PLAYBACK] menu.

Cannot print when connecting to printer.

- Printer not compatible with PictBridge.
- Set [USB MODE] to [PictBridge (PTP)] (→26).

Cannot get the date printing.

- Make date printing settings before printing.
 → In shop: Make [PRINT SET] settings (→134), and request printing 'with dates'.
 → With printer: Make [PRINT SET] settings, and use a printer compatible with date printing.
 → With supplied software: Select 'with dates' within print settings.
- Use [TEXT STAMP] before printing (→128).

Edges cut off pictures when printing.

- Release any trimming or edgeless printing settings on printer before printing. (Consult printer operating manual.)
- The pictures were recorded in 16:9 aspect ratio.
 → If printing in shop, check if 16:9 sizes can be printed.

Others

Menu not displayed in desired language.
- Change [LANGUAGE] setting (→28).

Camera rattles if shaken.
- This sound is made by the lens movement and is not a fault.

Cannot set [AUTO REVIEW].
- Cannot be set when any of the following are in use: [AUTO BRACKET], [MULTI ASPECT], [BURST], [SELF PORTRAIT], [HI-SPEED BURST], and [FLASH BURST] Scene Modes, and [AUDIO REC.].

Red lamp illuminated when pressing shutter button halfway in dark locations.
- [AF ASSIST LAMP] set to [ON] (→106).

AF Assist Lamp is not illuminated.
- [AF ASSIST LAMP] is set to [OFF].
- Not illuminated in bright locations or when using [SELF PORTRAIT], [SCENERY], [NIGHT SCENERY], [SUNSET], [FIREWORKS], [AERIAL PHOTO], or [UNDERWATER] Scene Modes.

Camera is hot.
- Camera may become a little warm during use, but this does not affect performance or quality.

Lens makes a clicking noise.
- When brightness changes, the lens may make a clicking noise and the monitor brightness may also change, but this is due to aperture settings being made.
 (Does not affect recording.)

Clock is incorrect.
- Camera has been left for a long period.
 → Reset the Clock (→17, 19).
- Long time was taken to set Clock (Clock behind by this amount).

When using zoom, picture becomes slightly warped and the edges of the subject become coloured.
- Pictures may be slightly warped or coloured around the edges, depending on the zoom ratio, but this is not a fault.

Zoom movement stops momentarily
- The zoom movement stops momentarily during Extra Optical Zoom and i.Zoom operation, but this is not a malfunction.

Zoom does not reach the maximum ratio
- If the zoom ratio stops at 3 ×, [MACRO ZOOM] has been set. (→50)

File numbers are not recorded in sequence.
- File numbers are reset when new folders are created (→142).

File numbers have jumped backwards.
- Battery was removed/inserted with power on.
 (Numbers may jump backwards if folder/file numbers are not correctly recorded.)

Usage cautions and notes

When in use

- Camera may become warm if used for long periods of time, but this is not a fault.
- To avoid jitter, use a tripod and place in a stable location.
 (Especially when using telescopic zoom, lower shutter speeds, or self-timer)
- **Keep the camera as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).**
 - If you use the camera on top of or near a TV, the pictures and sound on the camera may be disrupted by electromagnetic wave radiation.
 - Do not use the camera near cell phones because doing so may result in noise adversely affecting the pictures and sound.
 - Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
 - Electromagnetic wave radiation generated by microprocessors may adversely affect the camera, disturbing the pictures and sound.
 - If the camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the camera off and remove the battery or disconnect AC adaptor (optional). Then reinsert the battery or reconnect AC adaptor and turn the camera on.

 Do not use the camera near radio transmitters or high-voltage lines.
 - If you record near radio transmitters or high-voltage lines, the recorded pictures and sound may be adversely affected.
- Do not extend the supplied cord or cable.
- Do not allow camera to come into contact with pesticides or volatile substances (can cause surface damage or coating to peel).
- Never leave the camera and the battery in a car or on a car hood in the summer.
 It may cause leakage of the battery electrolyte, a generation of heat, and may cause a fire and the battery to burst due to the high temperature.

Caring for your camera

To clean your camera, remove the battery or disconnect the power plug from the outlet, and wipe with a soft, dry cloth.

- Use a damp cloth to remove stubborn stains, before wiping with a dry cloth.
- Do not use benzene, thinners, alcohol, or kitchen detergent, as these may damage the outer casing and finish of the camera.
- If using a chemically-treated cloth, read the supplied instructions carefully.
- Do not touch the lens barrier.

When not using for a while

- Turn off camera power before removing battery and card (ensure that battery is removed to prevent damage through over-discharge).
- Do not leave in contact with rubber or plastic bags.
- Store together with a drying agent (silica gel) if leaving in drawer, etc. Store batteries in cool (15 °C - 25 °C) places with low humidity (40 % - 60 %) and no major temperature changes.
- Charge battery once per year and use completely before storing again.

Usage cautions and notes (Continued)

Memory cards

- To prevent damage to cards and data
 - Avoid high temperatures, direct sunlight, electromagnetic waves, and static electricity.
 - Do not bend, drop, or expose to strong impacts.
 - Do not touch connectors on reverse of card or allow them to become dirty or wet.
- When disposing of/transferring memory cards
 - If using the 'format' or 'delete' functions on your camera or computer, this only changes the file management information, and does not completely delete the data from within the memory card. When disposing of or transferring your memory cards, we recommend physically destroying the memory card itself, or using commercially available computer data erasing software to completely delete the data from the card. Data within memory cards should be managed responsibly.

LCD Monitor

- Do not press hard on the LCD monitor. This may cause uneven display and damage the monitor.
- In cold climates or other situations when the camera becomes cold, the LCD monitor may be slightly less responsive than normal immediately after startup. Normal brightness will return once the internal components have warmed up.

Personal Information

If names or birthdays are set in [BABY] Mode or in the [FACE RECOG.] function, personal information will be included in the camera and the pictures that have been taken.

- Disclaimer
 - Data containing personal information can be altered or lost due to malfunction, static electricity, accidents, breakdowns, repairs, or other operations.
 Panasonic will not be liable for any damage that occurs, direct or indirect, as a result of the alteration or loss of data containing personal information.
- When ordering repairs or transferring/disposing of the camera
 - To protect your personal information, please reset the settings. (→26)
 - If any pictures are contained in the built-in memory, copy (→137) them to a memory card if necessary, and then format (→28) the built-in memory.
 - Remove the memory card from the camera.
 - When ordering repairs, the built-in memory and other settings may be returned to the initial purchase state.
 - If the above operations cannot be performed because of a camera malfunction, consult with the dealer or nearest Service Centre.

When transferring or disposing of your memory card, see 'When disposing of/transferring memory cards' in the previous section.

Important! Be sure to read the following before using the location names that are stored in this product.

User License Agreement for Location Name Data

Personal Use Only.
You agree to use this Data together with this digital camera for the solely personal, non-commercial purposes for which you were licensed, and not for service bureau, time-sharing or other similar purposes. Accordingly, but subject to the restrictions set forth in the following paragraphs, you may copy this Data only as necessary for your personal use to (i) view it, and (ii) save it, provided that you do not remove any copyright notices that appear and do not modify the Data in any way. You agree not to otherwise reproduce, copy, modify, decompile, disassemble or reverse engineer any portion of this Data, and may not transfer or distribute it in any form, for any purpose, except to the extent permitted by mandatory laws. Multi-disc sets may only be transferred or sold as a complete set as provided by Panasonic Corporation and not as a subset thereof.

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Warning.
The Data may contain inaccurate or incomplete information due to the passage of time, changing circumstances, sources used and the nature of collecting comprehensive geographic data, any of which may lead to incorrect results.

Usage cautions and notes (Continued)

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About the geographical coordinate system
The latitude and longitude standard (geographical coordinate system) recorded with this camera is WGS84.

About copyright
According to copyright law, the map data stored in this camera may not be used for purposes other than personal use without the permission of the copyright holder.

About navigation functions
This camera is not equipped with a navigation function.

Notices related to licensed software copyright holders

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Usage cautions and notes (Continued)

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■Countries and regions for which landmarks can be displayed and recorded

Screen display	Country or area
JAPAN	Japan
ALBANIA	Albania
ARGENTINA	Argentina
AUSTRALIA	Australia
AUSTRIA	Austria
BAHAMAS	The Bahamas
BAHRAIN	Bahrain
BELGIUM	Belgium
BOSNIA HERZEGOVINA	Bosnia and Herzegovina
BRAZIL	Brazil
BULGARIA	Bulgaria
BELARUS	Belarus
CANADA	Canada
USA	United States of America
CHILE	Chile
TAIWAN	Taiwan
CROATIA	Croatia
CZECH REPUBLIC	Czech Republic
DENMARK	Denmark
ESTONIA	Estonia
FINLAND	Finland
FRANCE	France
MONACO	Monaco
ANDORRA	Andorra
SPAIN	Spain
FRENCH GUIANA	French Guiana
GERMANY	Germany
GREECE	Greece
FRENCH GUADELOUPE	Guadeloupe - France
HONG KONG	Hong Kong
HUNGARY	Hungary
INDIA	India
REPUBLIK INDONESIA	Indonesia

Screen display	Country or area
IRELAND	Republic of Ireland
ITALY	Italy
SAN MARINO	San Marino
VATICAN CITY STATE	Vatican City
KUWAIT	Kuwait
LESOTHO	Lesotho
LATVIA	Latvia
LITHUANIA	Lithuania
LUXEMBOURG	Luxembourg
MACAU	Macao
MALAYSIA	Malaysia
BRUNEI	Brunei
MARTINIQUE	Martinique
MEXICO	Mexico
MONTENEGRO	Montenegro
MOROCCO	Morocco
OMAN	Oman
NAMIBIA	Namibia
NETHERLAND	Netherlands
NEW ZEALAND	New Zealand
NORWAY	Norway
POLAND	Poland
PORTUGAL	Portugal
QATAR	Qatar
REUNION ISLAND	Reunion
ROMANIA	Romania
RUSSIA	Russia
SAUDI ARABIA	Saudi Arabia
SERBIA	Serbia
SINGAPORE	Singapore
SLOVAK REPUBLIC	Slovakia
SLOVENIA	Slovenia
SOUTH AFRICA	South Africa
GIBRALTAR	Gibraltar
SWEDEN	Sweden

Usage cautions and notes (Continued)

Screen display	Country or area
SWITZERLAND	Switzerland
LIECHTENSTEIN	Liechtenstein
THAILAND	Thailand
UAE	UAE
TURKEY	Turkey
UKRAINE	Ukraine
MACEDONIA	Macedonia
ENGLAND	England
CHANNEL ISLANDS	Channel Islands
ISLE OF MAN	Isle of Man
NORTHERN IRELAND	Northern Ireland
SCOTLAND	Scotland
WALES	Wales
Puerto Rico	Puerto Rico
US VIRGIN ISLANDS	US Virgin Islands
VENEZUELA	Venezuela

■Countries and regions with no landmark information

- Some location name information is available, such as country name, region name, and city or town name.

Screen display	Country or area
CONGO, DEMOCRATIC REPUBLIC	Democratic Republic of the Congo
RWANDA	Rwanda
CONGO, REPUBLIC OF THE	Republic of the Congo
BURUNDI	Burundi
CENTRAL AFRICAN REPUBLIC	Central African Republic
TUNISIA	Tunisia
EGYPT	Egypt
KENYA	Kenya
GUINEA-BISSAU	Guinea-Bissau
TOGO	Togo
BURKINA FASO	Burkina Faso
BENIN	Benin
MALI	Mali
SENEGAL	Senegal
GHANA	Ghana
COTE D'IVOIRE (IVORY COAST)	Ivory Coast
GUINEA	Guinea
SIERRA LEONE	Sierra Leone
LIBERIA	Liberia
CAPE VERDE	Cape Verde
NIGER	Niger
CHAD	Chad
NIGERIA	Nigeria
CAMEROON	Cameroon
GABON	Gabon
EQUATORIAL GUINEA	Equatorial Guinea
SAO TOME AND PRINCIPE	Sao Tome and Principe
SAINT HELENA	Saint Helena
MOZAMBIQUE	Mozambique
ANGOLA	Angola
MADAGASCAR	Madagascar

Screen display	Country or area
MAYOTTE	Mayotte
COMOROS	Comoros
MAURITIUS	Mauritius
SEYCHELLES	Seychelles
MALTA	Malta
MONGOLIA	Mongolia
ICELAND	Iceland
SOUTH KOREA	South Korea
VIETNAM	Vietnam
LAOS	Laos
CAMBODIA	Cambodia
KAZAKHSTAN	Kazakhstan
BURMA (MYANMAR)	Myanmar
NEPAL	Nepal
BANGLADESH	Bangladesh
BHUTAN	Bhutan
SRI LANKA	Sri Lanka
MALDIVES	Maldives
SVALBARD	Svalbard Archipelago, Jan Mayen Island
FAROE ISLANDS	Faroe Islands
UZBEKISTAN	Uzbekistan
TURKMENISTAN	Turkmenistan
CYPRUS	Cyprus
EAST TIMOR	East Timor
GREENLAND	Greenland
GUAM	Guam
MARSHALL ISLANDS	Marshall Islands
NORFOLK ISLAND	Norfolk Island
NEW CALEDONIA	New Caledonia
NAURU	Nauru
PAPUA NEW GUINEA	Papua New Guinea
FIJI	Fiji
SOLOMON ISLANDS	Solomon Islands

Usage cautions and notes (Continued)

Screen display	Country or area
VANUATU	Vanuatu
MICRONESIA, FEDERATED STATES OF	Federated States of Micronesia
AMERICAN SAMOA	American Samoa
COOK ISLANDS	Cook Islands
FRENCH POLYNESIA	French Polynesia
KIRIBATI	Kiribati
NIUE	Niue
SAMOA	Samoa
TONGA	Tonga
WALLIS AND FUTUNA	Wallis and Futuna
PHILIPPINES	Philippines
NORTHERN MARIANA ISLANDS	Northern Mariana Islands
PALAU	Palau
TUVALU	Tuvalu
TOKELAU	Tokelau
URUGUAY	Uruguay
FALKLAND ISLANDS (ISLAS MALVINAS)	Falkland Islands (Malvinas)
BERMUDA	Bermuda
CUBA	Cuba
JAMAICA	Jamaica
HAITI	Haiti
DOMINICAN REPUBLIC	Dominican Republic
TURKS AND CAICOS ISLANDS	Turks and Caicos Islands
CAYMAN ISLANDS	Cayman Islands
COSTA RICA	Costa Rica
GUATEMALA	Guatemala
HONDURAS	Honduras
PANAMA	Panama
NICARAGUA	Nicaragua
EL SALVADOR	El Salvador
BELIZE	Belize
PERU	Peru
PARAGUAY	Paraguay

Screen display	Country or area
BOLIVIA	Bolivia
ECUADOR	Ecuador
SAINT PIERRE AND MIQUELON	Saint Pierre and Miquelon
COLOMBIA	Colombia
NETHERLANDS ANTILLES	Netherlands Antilles
BARBADOS	Barbados
ARUBA	Aruba
GUYANA	Guyana
SAINT LUCIA	Saint Lucia
TRINIDAD AND TOBAGO	Trinidad and Tobago
MONTSERRAT	Montserrat
SURINAME	Suriname
ANTIGUA AND BARBUDA	Antigua and Barbuda
GRENADA	Grenada
SAINT VINCENT AND THE GRENADINES	Saint Vincent and the Grenadines
ANGUILLA	Anguilla
DOMINICA	Dominica
SAINT KITTS AND NEVIS	Saint Kitts and Nevis
BRITISH VIRGIN ISLANDS	British Virgin Islands

■Landmark types

The following points of interest, such as tourist spots and public facilities, are displayed as landmarks.

- Although about 30,000 landmarks are registered for Japan and about 500,000 are registered for countries other than Japan, note that some landmarks are not registered. (Current as of February 2010. Will not be updated.)

Zoo	Botanical garden	Aquarium
Amusement park	Athletics ground	Baseball park
Gymnasium	Golf course	Famous site, tourist attraction, beauty spot
Tower	Castle, ruins	Shrine
Buddhist temple	Church	Tomb, monument, mound, historic site, palace
Airport, airfield	Port	Ferry terminal, ship boarding point
Leisure park	Tourist park	Station
Prefectural or state office	City or ward office	Town or village office
Embassy, consulate	Art museum	History museum
Other museum	Theater	

Recording picture/time capacity

Recording picture capacity (still pictures)

●Varies according to [ASPECT RATIO] (→96), [PICTURE SIZE] (→95), or [QUALITY] (→96) settings.

[ASPECT RATIO]		4:3									
[PICTURE SIZE]		12 M 4000×3000		8 M EZ 3264×2448		5 M EZ 2560×1920		3 M EZ 2048×1536		0.3 M EZ 640×480	
[QUALITY]											
Built-in memory		2	3	3	5	4	7	8	17	65	100
Memory card	256 MB	47	70	65	98	80	140	150	290	1080	1690
	512 MB	94	135	130	195	155	280	300	580	2150	3350
	1 GB	190	280	260	390	320	560	600	1160	4310	6710
	2 GB	380	560	520	790	650	1130	1220	2360	8770	12290
	4 GB	760	1110	1030	1560	1280	2230	2410	4640	17240	24130
	6 GB	1160	1690	1580	2380	1950	3390	3660	7050	26210	36700
	8 GB	1550	2270	2110	3180	2610	4540	4910	9440	35080	49120
	12 GB	2340	3420	3190	4810	3940	6860	7400	14240	52920	74090
	16 GB	3120	4570	4250	6410	5250	9150	9880	19000	70590	98830
	24 GB	4540	6640	6180	9310	7630	13280	14350	27590	102500	143510
	32 GB	6270	9170	8540	12870	10540	18350	19820	38120	141620	198260
	48 GB	9100	13490	12560	18210	15170	26010	28020	52030	182130	182130
	64 GB	12350	18300	17040	24710	20590	35300	38020	70610	247150	247150

Recording time capacity (motion pictures)

●Varies according to [REC MODE] (→108), or [REC QUALITY] (→108) settings.

[REC MODE]		[AVCHD Lite(GPS REC)]/ [AVCHD Lite]		
[REC QUALITY]		[GSH]/[SH]	[GH]/[H]	[GL]/[L]
Built-in memory		Cannot be used		
Memory card	256 MB	Operation is not guaranteed		
	512 MB	3 min	4 min	7 min
	1 GB	7 min	9 min	14 min
	2 GB	15 min	20 min	29 min
	4 GB	30 min	40 min	1 h
	6 GB	46 min	1 h	1 h 28 min
	8 GB	1 h	1 h 20 min	1 h 54 min
	12 GB	1 h 34 min	2 h	2 h 54 min
	16 GB	2 h	2 h 40 min	4 h
	24 GB	3 h	4 h	6 h
	32 GB	4 h	5 h 20 min	8 h
	48 GB	6 h	8 h	12 h
	64 GB	8 h	10 h 40 min	16 h*

For the DMC-TZ8/DMC-ZS5 (→176)

- Figures given are estimates. May vary according to conditions, card type, and subject.
- Recording capacities/times displayed on LCD monitor may not be reduced regularly.

- When the number of recordable pictures exceeds 99,999, '+99999' is displayed.

	3:2										16:9									
	11.5 M 4176×2784		7.5 M EZ 3392×2264		4.5 M EZ 2656×1768		2.5 M EZ 2048×1360		0.3 M EZ 640×424		10.5 M 4320×2432		7 M EZ 3552×2000		4.5 M EZ 2784×1568		2 M EZ 1920×1080		0.2 M EZ 640×360	
2	3	3	5	6	11	9	19	70	100	2	3	3	5	6	12	12	25	83	115	
47	71	64	99	110	195	170	320	1170	1690	50	75	63	100	115	210	220	420	1380	1900	
95	140	125	195	220	390	330	640	2320	3350	100	150	125	200	230	420	440	830	2740	3770	
190	280	250	390	450	790	670	1280	4640	6710	200	300	250	400	470	850	880	1670	5490	7550	
390	570	520	800	930	1610	1360	2560	8770	12290	400	610	520	820	950	1700	1800	3410	10240	15360	
760	1130	1030	1580	1820	3170	2680	5020	17240	24130	800	1200	1020	1630	1880	3350	3540	6700	20110	30170	
1160	1730	1560	2410	2770	4820	4070	7640	26210	36700	1220	1830	1550	2470	2860	5090	5390	10190	30580	45870	
1560	2310	2090	3230	3720	6460	5450	10230	35080	49120	1630	2450	2080	3310	3830	6820	7220	13640	40930	61400	
2350	3490	3160	4870	5610	9740	8230	15430	52920	74090	2460	3700	3130	5000	5780	10290	10890	20580	61740	92610	
3140	4660	4220	6500	7480	13000	10980	20590	70590	98830	3290	4940	4180	6670	7720	13720	14530	27450	82360	123540	
4560	6760	6130	9440	10870	18880	15940	29890	102500	143510	4780	7170	6080	9690	11210	19930	21100	39860	119590	179380	
6310	9350	8470	13040	15010	26080	22020	41300	141620	198260	6600	9910	8400	13390	15480	27530	29150	55070	165220	247830	
9100	13490	12140	19170	21420	36420	30350	60710	182130	182130	9580	14570	12140	19170	22760	40470	40470	72850	182130	364270	
12350	18300	16470	26010	29070	49430	41190	82380	247150	247150	13000	19770	16470	26010	30890	54920	54920	98860	247150	494310	

	[MOTION JPEG]			
	[HD]	[WVGA]	[VGA]	[QVGA]
	—	—	—	24 s
	59 s	2 min 30 s	2 min 35 s	7 min 20 s
	2 min	5 min	5 min 10 s	14 min 40 s
	4 min	10 min 10 s	10 min 40 s	29 min 30 s
	8 min 20 s	20 min 50 s	21 min 40 s	1 h
	16 min 20 s	41 min	42 min 40 s	1 h 58 min
	25 min	1 h 2 min	1 h 5 min	3 h
	33 min 30 s	1 h 23 min	1 h 27 min	4 h 1 min
	50 min 30 s	2 h 6 min	2 h 11 min	6 h 4 min
	1 h 7 min	2 h 48 min	2 h 55 min	8 h 5 min
	1 h 38 min	4 h 4 min	4 h 14 min	11 h 45 min
	2 h 15 min	5 h 38 min	5 h 51 min	16 h 14 min
	3 h 19 min	8 h 17 min	8 h 37 min	23 h 52 min
	4 h 30 min	11 h 14 min	11 h 41 min	32 h 23 min

* However, note that the maximum continuous time is 13 hours, 3 minutes and 20 seconds.

- A maximum of approx. 2 GB of continuous motion picture can be recorded in [MOTION JPEG] format. (Even if there is more than 2 GB of available space on the card, the available recording time will be calculated for a maximum of 2 GB.) The time displayed in the table is the total time.

Recording picture/time capacity

Recording picture capacity (still pictures)

●Varies according to [ASPECT RATIO] (→96), [PICTURE SIZE] (→95), or [QUALITY] (→96) settings.

[ASPECT RATIO]		4:3									
[PICTURE SIZE]		12 M 4000×3000		8 M EZ 3264×2448		5 M EZ 2560×1920		3 M EZ 2048×1536		0.3 M EZ 640×480	
[QUALITY]											
Built-in memory		8	12	11	17	14	25	27	53	195	310
Memory card	256 MB	47	70	65	98	80	140	150	290	1080	1690
	512 MB	94	135	130	195	160	280	300	580	2150	3350
	1 GB	190	280	260	390	320	560	600	1160	4310	6710
	2 GB	380	560	520	790	650	1130	1220	2360	8780	12290
	4 GB	760	1110	1030	1560	1280	2230	2410	4640	17240	24130
	6 GB	1160	1690	1580	2380	1950	3390	3660	7050	26210	36700
	8 GB	1550	2270	2110	3180	2610	4540	4910	9440	35080	49120
	12 GB	2340	3420	3190	4810	3940	6860	7400	14240	52920	74090
	16 GB	3120	4570	4250	6410	5250	9150	9880	19000	70590	98840
	24 GB	4540	6640	6180	9310	7630	13280	14350	27590	102500	143510
	32 GB	6270	9170	8540	12870	10540	18350	19820	38120	141620	198270
	48 GB	9100	13490	12560	18210	15170	26010	28020	52030	182140	182140
	64 GB	12350	18300	17040	24710	20590	35300	38020	70610	247160	247160

Recording time capacity (motion pictures)

●Varies according to [REC QUALITY] (→77) setting.

[REC QUALITY]		[HD]	[WVGA]	[VGA]	[QVGA]
Built-in memory		—	—	—	1 min 24 s
Memory card	256 MB	59 s	2 min 35 s	2 min 40 s	7 min 50 s
	512 MB	2 min	5 min 10 s	5 min 20 s	15 min 40 s
	1 GB	4 min	10 min 20 s	10 min 50 s	31 min 20 s
	2 GB	8 min 20 s	21 min 20 s	22 min 10 s	1 h 3 min
	4 GB	16 min 30 s	41 min 50 s	43 min 40 s	2 h 5 min
	6 GB	25 min 10 s	1 h 3 min	1 h 6 min	3 h 11 min
	8 GB	33 min 40 s	1 h 25 min	1 h 28 min	4 h 15 min
	12 GB	50 min 50 s	2 h 8 min	2 h 14 min	6 h 26 min
	16 GB	1 h 8 min	2 h 52 min	2 h 59 min	8 h 35 min
	24 GB	1 h 38 min	4 h 9 min	4 h 19 min	12 h 27 min
	32 GB	2 h 16 min	5 h 45 min	5 h 59 min	17 h 13 min
	48 GB	3 h 20 min	8 h 27 min	8 h 48 min	25 h 18 min
	64 GB	4 h 32 min	11 h 28 min	11 h 56 min	34 h 21 min

- Figures given are estimates. May vary according to conditions, card type, and subject.
- Recording capacities/times displayed on LCD monitor may not be reduced regularly.

- When the number of recordable pictures exceeds 99,999, '+99999' is displayed.

	3:2										16:9									
	11.5 M 4176×2784		7.5 M EZ 3392×2264		4.5 M EZ 2656×1768		2.5 M EZ 2048×1360		0.3 M EZ 640×424		10.5 M 4320×2432		7 M EZ 3552×2000		4.5 M EZ 2784×1568		2 M EZ 1920×1080		0.2 M EZ 640×360	
	8	12	11	17	20	36	30	58	210	310	8	13	11	18	21	38	40	77	250	340
	47	71	64	99	110	195	170	320	1170	1690	50	75	63	100	115	210	220	420	1380	1900
	95	140	125	195	220	390	330	640	2320	3350	100	150	125	200	230	420	440	830	2740	3770
	190	280	250	390	450	790	670	1280	4640	6710	200	300	250	400	470	850	880	1670	5490	7550
	390	570	520	800	930	1610	1360	2560	8780	12290	400	610	520	820	950	1700	1800	3410	10240	15360
	760	1130	1030	1580	1820	3170	2680	5020	17240	24130	800	1200	1020	1630	1880	3350	3540	6700	20110	30170
	1160	1730	1560	2410	2770	4820	4070	7640	26210	36700	1220	1830	1550	2470	2860	5090	5390	10190	30580	45870
	1560	2310	2090	3230	3720	6460	5450	10230	35080	49120	1630	2450	2080	3310	3830	6820	7220	13640	40930	61400
	2350	3490	3160	4870	5610	9740	8230	15430	52920	74090	2460	3700	3130	5000	5780	10290	10890	20580	61740	92620
	3140	4660	4220	6500	7480	13000	10980	20590	70600	98840	3290	4940	4180	6670	7720	13720	14530	27450	82360	123550
	4560	6760	6130	9440	10870	18880	15940	29890	102500	143510	4780	7170	6080	9690	11210	19930	21100	39860	119590	179390
	6310	9350	8470	13040	15010	26080	22020	41300	141620	198270	6600	9910	8400	13390	15480	27530	29150	55070	165220	247830
	9100	13490	12140	19170	21420	36420	30350	60710	182140	182140	9580	14570	12140	19170	22760	40470	40470	72850	182140	364280
	12350	18300	16470	26010	29070	49430	41190	82380	247160	247160	13000	19770	16470	26010	30890	54920	54920	98860	247160	494330

- A maximum of approx. 2 GB of continuous motion picture can be recorded. (Even if there is more than 2 GB of available space on the card, the available recording time will be calculated for a maximum of 2 GB.)
 The time displayed in the table is the total time.

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